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PHIL HOLLINGBERY

Running mission-critical applications on an untried operating system is a bigger gamble than most companies are willing to take. Early adopters of Microsoft's Datacenter Server say the high-end Windows operating system delivers on reliability but could benefit from less vendor finger-pointing and more flexible hardware offerings. Page 27

LIVING WITH DATACENTER SERVER

IT at Heart of 'Shock and Awe'

With U.S. invasion, era of 'network-centric warfare' has dawned

BY DAN VERTON
WASHINGTON

Military officials and experts are characterizing Operation Iraqi Freedom as the most IT-intensive military campaign in history. The campaign, officials said, puts to the test a "network-centric warfare" strategy that has been under development since the first Persian Gulf War 12 years ago.

"There are more computers on the battlefield than ever before," said Col. Mark Bowman, operations officer for the U.S. Army's 11th Signal Brigade. In fact, there are so many computers involved in managing the modern battlefield that digital data networks have become more important to senior commanders than traditional voice networks, he said.

The deployable headquarters facility of the U.S. Central Command in Doha, Qatar, was designed by Lexington, Mass.-based Raytheon Co. prior to the terrorist attacks of Sept. 11, 2001. However, as military

IT in Iraq, page 7

Technology Aims To Sync Users' Communications

Siemens and Verizon moving to consolidate end-user access to voice and messaging systems

BY MATT HAMBLEN

Siemens AG today will announce IP-based networking software designed to synchronize voice communications, messaging and real-time collaboration tools on a mix of devices, including PCs, cell phones and pagers.

New York-based Verizon Communications last week confirmed that it plans to roll out similar functionality later this year as a service for both corporate and residential customers. Analysts said other telecommunications carriers are also planning such moves.

CONVERGENCE

Mark Straton, senior vice president of global marketing at Siemens Information and Communication Networks Inc. in Boca Raton, Fla., said the Siemens unit's OpenScape Version 1.0 software will provide users with consolidated access to all corporate communications resources. That includes phone calls, voice mail, e-mail, instant messaging and tools for Web, voice and videoconferencing, he said.

Users will be able to configure OpenScape with personalized rules to govern how incoming phone calls and e-mail messages should be forwarded to them, Straton said. Like IM systems, OpenScape supports presence awareness so users can see when other workers are logged onto networks.

Douglass Crawford, director of network services at Kaiser Permanente Health Plan Inc.

Convergence, page 16

Mainframe Brain Drain Looms

Retirements to sap expertise; data center group offers training

BY PATRICK THIBODEAU
LAS VEGAS

A mainframe skills shortage is emerging as subtly as gray hair. It's bumping up training costs and raising concerns among data center managers who wonder how they will replace retiring green-screen wizards with workers weaned on Windows and open systems.

Addressing a problem it says has the potential to become acute over the next five to seven years, a data center professional association last week announced a program to help companies attract and train IT professionals to prevent a future shortage of mainframe workers.

At its semiannual conference here, AFCOM outlined a Data Center Knowledge initiative that includes offering online courses in data center

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In the Technology section: Low-cost Advanced Technology Attachment disk arrays are gaining ground in near-line storage and disk-to-disk backup applications, and a faster class of drive arrays that use the new Serial ATA interface standard is likely to challenge SCSI for high-performance applications as well. **Page 36**

Cold Calls Feeling the Heat

In the Management section: Compliance with do-not-call laws is becoming a matter of business survival for companies that reap big revenues through phone-based solicitations. IT managers can play a significant role in helping to automate the process. **Page 45**

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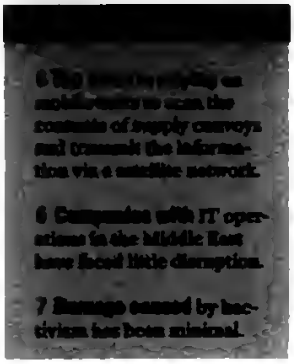

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STORAGE: As economic conditions get tougher, the tough guys are seeking cover within the shadow of blue-chip vendors, says Jon William Toigo in this column for *Storage Networking World Online*. **QuickLink 37250**

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Army Uses Mobile Technology, Satellite Link to Track Supplies

Data scanned from supply convoys updates asset-tracking system in U.S.

BY MARC L. SONGINI

AS PART of the war with Iraq, the U.S. Army has deployed 64 mobile units equipped with portable systems that are being used to scan information about combat and supply vehicles and send the data via a secure satellite link to the Army's central asset-tracking system.

The deployment of the units in Kuwait and unspecified other locations marks the first time the Army has connected mobile users to the asset-tracking system, said Gary Winkler, project manager of the Army's Transportation Systems Joint Program Management Office.

The application, called the Transportation Coordinator's Automated Information for Movements System II (TC-AIMS II), is built around a Sybase Inc. database that runs on a Windows server. The technology was first used in 1998 and is located at a facility near Fort Belvoir, Va.

Winkler said the mobile units sent to the Gulf region each have a 65-lb. case containing a ruggedized laptop PC, wireless bar code and radio frequency identification readers, a printer and other peripheral devices.

The equipment can be stationed at roadsides or intersections and used to scan vehicles in army columns and supply convoys as they approach, he said.

Wireless Transmission

The data is sent to the TC-AIMS II system via the U.S. Department of Defense's secure wireless network, which is provided by Iridium Satellite LLC in Arlington, Va. When TC-AIMS II gets a feed from the Iridium network, it automatically creates new entries and updates information in the Sybase database, Winkler explained.

From there, the data is presented to military officials in the field and at the Pentagon via map-style graphical user interfaces. "It gives commanders real-time information about where people and equipment are," Winkler said. "And they know when they get to the final destination." Up to 15,000 end users access the system at any given time, he added.

By comparison, earlier applications used to track materials "did not provide 'in-the-box' visibility," Winkler said. "They simply documented that a container was shipped and arrived. Consequently, all that was known was that there was a box container in a [military] theater, but no one knew exactly what was in the box."

TC-AIMS II was developed in the aftermath of the first Gulf War in a joint services project led by the Army. The Navy deployed the system in December and used it to prepare manifests of cargo and military personnel on ships that were sent to the Persian Gulf, Winkler said.

Global View

The Army is also working to integrate TC-AIMS II with two other logistics and transportation systems in an effort to provide a consolidated view of the location of military personnel and materials in the air and on sea or land, he said.

One of those applications, called the Automated Air Load Planning System (AALPS), calculates the amount of cargo space available on aircraft. An integrated version of TC-AIMS II and AALPS is now in testing, according to Winkler.

The integration project is also due to include the Integrated Computerized Deployment Execution System, which manages the loading of ships. Winkler said IT managers plan to seek approval from the Pentagon to put the combined system into production in December.

U.S. IT Workers in Middle East Stay Put

BY TODD R. WEISS

As the war in Iraq intensifies, multinational companies are keeping a close watch on their IT operations in the Middle East and are preparing to react quickly if conditions deteriorate. But none of the companies that spoke with *Computerworld* last week have recalled any U.S. IT workers from the region.

For example, American Express Co. has about 200 IT workers in the Middle East, including an undisclosed number of Americans, said company spokesman Tony Mitchell. While no employees have yet been pulled out, Amex has been re-evaluating and strengthening its security procedures in the area as a precaution, Mitchell said.

Companies are generally tight-lipped about their contingency plans in the area for security reasons. Outsourcing vendors Affiliated Computer Services Inc. and Computer Sciences Corp., automaker Ford Motor Co. and energy company British Petroleum PLC all refused to comment for this story. Other companies spoke only in general terms.

> **"At this present time, we're not aware of any business disruptions related to Iraq."**
>
> JOE STUNKARD, SPOKESMAN, IBM

Stephanie Hampton, a spokeswoman for Washington-based Marriott International Inc., said the company has six hotels in the Middle East, each with its own IT systems managers.

"It's business as usual at this point," Hampton said. The company has contingency plans in place for workers, but no details are being released, Hampton said.

Diesel engine manufacturer Cummins Inc. in Columbus, Ind., doesn't have a large IT presence in the region, said spokesman Jason Rawlings. But the company will make relocation available to any expatriate workers who feel uncomfortable where they are, he said. Most of Cummins' IT employees in that part of the world are in India and aren't directly affected by the war, he said.

Maintaining Systems

Sun Microsystems Inc. has a "very small number" of U.S. IT workers in the Middle East and has plans in place to maintain its IT systems in the event of an evacuation, said Sun spokeswoman Diane Carlini.

Joe Stunkard, a spokesman for IBM, said few IBM employees are in the countries surrounding Iraq and that most of the company's work in the region is carried out by business partners. "We're assessing the potential impact on our employees, customers, facilities and partners, and will take appropriate actions to protect and maintain our business operations," he said. "At this present time, we're not aware of any business disruptions related to Iraq."

John Shaw, a spokesman for air conditioning and heating supplier Carrier Corp. in Farmington, Conn., said there are no U.S. IT workers in the company's offices in Saudi Arabia, Bahrain, Lebanon, Egypt or the United Arab Emirates. And so far, he said, conditions haven't deteriorated for the company as a result of the war.

"There doesn't seem to be any backlash against American companies that I'm aware of," Shaw said. "Business is business, and politics is what it is."

Reporter Thomas Hoffman contributed to this story.

Little War-Related Hactivism Reported

BY JAIKUMAR VIJAYAN

The vast majority of war-related cyberattacks last week appear to have been little more than low-level Web site defacements that had little or no impact on U.S. businesses.

But the sustained denial-of-service attacks that crippled the English-language Web site of Arab satellite TV network Al-Jazeera served as a sobering reminder of just what can happen if a company does become a hactivist target.

One week into the war with Iraq, most of the predicted cyberfallout appears to have been limited to the Web equivalent of graffiti, said security experts. "At least 99% of the attacks are pure defacement of Web sites" with pro- and anti-war messages, said Michael Albrecht, a manager at F-Secure Corp. in Helsinki, Finland.

The company estimated that as many as 10,000 Web sites worldwide may have been defaced since the war began. Although U.S. government and military sites appear to be targets of choice, vandals are attacking any vulnerable service they can find, Albrecht said. In most instances, the attacks appeared to be coming from individuals rather than from organized groups or government entities, he added.

No Surprises

The level of hacking activity has been no different from usual, said Marty Lidner, an incident-handling team leader at the CERT Coordination Center at Carnegie Mellon University in Pittsburgh. "In the big scheme of things, the level of activity reported to us hasn't really changed," Lidner said.

"There has been no significant increase in Web defacement activity between prewar chatter and actual war," said Russ Cooper, an analyst at TruSecure Corp. in Herndon, Va. "A defacement may say 'No war,' but it would have said 'No cheese' or something else if there had been no war."

The minimal impact on business systems so far isn't surprising, said Dave Krauthamer, director of information systems at Advanced Fibre Communications Inc. in Petaluma, Calif. "I think you need to be extremely skilled to hack into corporate systems," he said. "I don't think current events make the risk of cyberterrorism any greater."

> **"A defacement may say 'No war,' but it would have said 'No cheese' or something else if there had been no war."**
>
> **RUSS COOPER** TRUSECURE CORP

Moreover, most companies have revamped their management of security threats since Sept. 11, 2001, said Bruce Blitch, CIO at Tessenderlo Kerley Inc., a multinational chemical company with U.S. headquarters in Phoenix. For instance, Tessenderlo has further isolated critical plant-control systems and tightened security policies relating to its IT infrastructure.

"If what happened nearly two years ago didn't make a company pay attention to security, then it's unlikely that war with Iraq would change that," Blitch said.

Even so, the attacks on Al-Jazeera show what can happen if attackers get it right. The attacks began March 25 after the network posted photos of U.S prisoners of war. The Web site was almost totally inaccessible most of last week.

The site appears to have been hit with twin denial-of-service attacks, said Eric Seigel, a consultant at Internet performance monitoring company Keynote Systems Inc. in San Mateo, Calif. One was directed at the company's Web servers, the other at a core Domain Name System server that provides browsers with the address of Al-Jazeera's Web site, Seigel said.

Continued from page 1

IT in Iraq

tensions with Iraq began to rise, CENTCOM commander in chief Gen. Tommy Franks put the project into high gear.

Although Raytheon has been asked by the military not to divulge the specific IT systems in use, *Computerworld* has confirmed that the mobile headquarters facility includes a high-speed fiber-optic network backbone that can deliver video over IP to the desktop, as well as direct links to the hundreds of intelligence and surveillance systems and deployed forces in and around the Persian Gulf.

Video on the Battlefield

Col. Dan Gerstein, commander of the Army's 93rd Signal Brigade in Fort Gordon, Ga., said the integration of real-time video into the military's command and control operations marks a significant departure from the first Persian Gulf War. Although there was limited use of videoconferencing during Operation Desert Storm, ground forces today

are making use of battlefield videoconferencing systems as they advance on Baghdad, said Gerstein.

What's enabling that is the U.S. Department of Defense's Global Broadcast Service (GBS), which provides massive amounts of bandwidth to allow tactical commanders to receive imagery and other data from CENTCOM headquarters or unmanned aerial vehicles, said Gerstein.

The $500 million GBS is based on commercial direct broadcast satellite technology and provides high-speed data connections of more than 24M bit/sec. to tactical computers equipped with antennas as small as 22 in. in diameter.

The use of Global Positioning System (GPS) technologies is also being touted as a major improvement since Operation Desert Storm. Gerstein said some units are deploying GPS for "real-time situational awareness," allowing for the direct exchange of information among soldiers on the front lines, rather than requiring information to be routed through headquarters.

"The Gulf War was an analog conflict," said Gerstein. "Today, there are digital formations at much lower levels of command."

One such command is the Army's 4th Infantry Division, which has yet to arrive in Iraq. Based at Fort Hood, Texas, the 4th Infantry Division is the Army's first fully IT-equipped division. It will arrive in Iraq armed with software called Force XXI Battle Command Brigade and Below, which is designed to provide soldiers with vital battlefield information, especially the location of friendly and enemy forces.

Meanwhile, the U.S. Navy's missile-guided cruiser USS *Shiloh* is for the first time using a system called Area Air Defense Commander (AADC). Designed by General Dynamics Corp. in Falls Church, Va., and powered by a suite of supercomputers and high-performance servers from Silicon Graphics Inc. in Mountain View, Calif., AADC tracks hundreds of planes and missiles simultaneously. The system then displays the data on a 30-by-30-ft. "reality" screen that enables rapid transfer of digital information to end users.

"The average commander has 30 to 50 gigabytes of data to interpret at any given time," said John Burwell, SGI's senior director of government industry. By using a screen with a wide field of vision, the system enables users to interpret a lot of data in real time, he said.

John Hillen, senior vice president of Fairfax, Va.-based American Management Systems Inc. and a veteran of the first Persian Gulf War, said the pace and scale of the current conflict is nearly seven times that of Operation Desert Storm, though approximately one-third the number of troops are participating.

"This is where transformation has paid off," said Hillen. "The real IT story of this war is that it is the birth of network-centric warfare and the ability to make decisions rapidly. We're changing air sorties in flight. That was unheard of 10 years ago."

GPS JAMMING

Coalition forces destroyed Iraqi GPS jammers that were allegedly supplied by a Russian company that has done business with the U. S. Army

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AT DEADLINE

CSC to Manage IT For Motorola

Motorola Inc. said it has signed a 10-year IT outsourcing contract valued at $1.6 billion with Computer Sciences Corp. (CSC) in El Segundo, Calif. Effective May 1, CSC will take over management of Motorola's midrange, desktop and distributed systems as well as its networks and help desk operations. About 1,300 IT workers at Schaumburg, Ill.-based Motorola will be shifted to CSC.

Lucent Settles 54 Shareholder Suits

Lucent Technologies Inc. said it has agreed to settle 54 shareholder lawsuits that were filed after the Murray Hill, N.J.-based company ran into financial problems in 2000. Lucent will pay $415 million in cash, stock and warrants to buy its shares as part of the deal, and it will also contribute up to $5 million to cover settlement-administration costs. The company's insurers will pay another $148 million in cash.

SAP Ships Apps For Midsize Users

SAP AG has released a U.S. version of its SAP Business One applications, which are tailored for midsize companies with up to several hundred workers. SAP officials said users should be able to install the applications in as little as two weeks. The midmarket software uses a different code base than the vendor's flagship SAP Business Suite products.

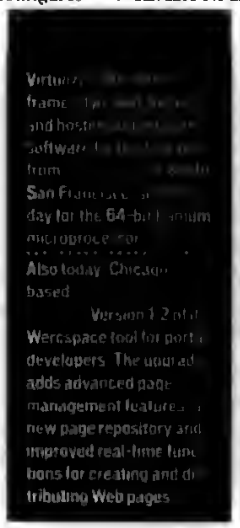
Appeals Court to Hear Trade Groups

A federal appeals court said it will hear arguments from two trade groups opposed to the antitrust settlement between the U.S. Department of Justice and Microsoft Corp. The groups, which are backed by some of Microsoft's top rivals, argue that the settlement deal isn't stringent enough.

MARK HALL • ON THE MARK

Overworked (or Lazy) Sysadmins Get a . . .

. . . security tool that automates fixes of vulnerabilities in network servers and PCs. Citadel Security Software Inc. will release Hercules 2.0 on April 15. The upgrade will defend Solaris and Linux in addition to Windows. Hercules works with vulnerability-assessment products from companies like Internet Security Systems Inc. and Harris Corp. that identify security gaps on your network. Hercules collects all the problems in a single screen and lets a sysadmin fix them with a single mouseclick. And in the new release, **you can set policies to remediate known problems immediately** without notifying an admin. According to Carl Banzhof, Dallas-based Citadel's CTO, Hercules maintains the latest software patches for known bugs, slams shut open back doors in servers, secures insecure user accounts and properly configures misconfigured systems, among other automated fixes. He also points out that Windows servers have the most vulnerabilities, **even when weighted for their market share,** because so many sysadmins simply use out-of-the-box configurations, which historically have been "wide-open doors to networks." It's not as if those configuration lapses have been a big, dark secret, Banzhof admits. Lazy sysadmins, perhaps? Well, the CTO demurs, "they're an overworked bunch." • Another vendor CTO has taken a slight swipe at users. Eric Newcomer at Waltham, Mass.-based Iona Technologies Inc. says vendor competition may derail the Web services standards efforts (see "Standards Stupidity," page 24). He argues, "Vendors naturally move toward creating competitive advantage," which imperils the standards process. But he thinks **it's possible users can save the day,** though he's skeptical you will step up to the task. "Users are going to have to take control in their procurement process," he says. "It's the only way standards will happen in Web services." So, will users reject Microsoft or IBM products when they veer away from industry standards? "It remains to be seen." **You can almost see him crossing his fingers.** • If you think of your IT operations as a service business inside the company, the arrival today of Changepoint 8.0 should grab your attention. The software, which can integrate with Microsoft Project, does more than project management, according to Chuck Tatham, marketing VP at Changepoint Corp. in Richmood Hill, Ontario. It handles all aspects of workflow process and oversees **everyday interrupt-driven tasks that plague IT departments** and are overlooked by project management systems. The upgrade is now 100% Web-based and adds Oracle9i to Windows SQL Server as its database, along with support for Microsoft Outlook, among other improvements. Pricing averages about $1,000 per user. • Paul Giardina, marketing veep at Cartesis SA in Paris, says today's release of its financial management application, Magnitude **Version 8.2, greatly improves the software's scalability** by adding multiserver capabilities and load balancing as well as support for DB2 and Oracle to its existing support for SQL Server. It will also add Crystal Analysis software as an option to the product. Finally, he says, the software now includes advanced budgeting tools that target competitors like SRC Software Inc. Before the year is out, Giardina says to expect Magnitude to include improved workflow operations and support for both the U.S. and European versions of Exteosible Business Reporting Language. • Portland, Ore.-based SRC must have been spying on its French competitor because it, too, announces a new product today. The new software, Advisor Series FI, lets bank employees at all levels perform financial modeling functions. Peri Pierone, SRC's VP of financial institutions, says that unlike other vendors' offerings, SRC "emphasizes ease of use without sacrificing sophistication." For example, he claims that with minimal training, branch managers will be able to create models on the effect of maturing money-market certificates of deposit and shifting interest rates. The application is **.Net-based and works with either SQL Server or Oracle databases.** It can run as a Web-only application or by using Microsoft Terminal Server or Citrix MetaFrame. And, for those of you who care, it's not from France. ◗



Dell Rolls Out First Printers; Rivals React

BY BOB BREWIN

Dell Computer Corp. made its entry into the printer market official last week by rolling out four models, including a pair of machines designed for use by corporate workgroups.

Rivals are respooding to Dell's move. Analysts expect Hewlett-Packard Co. this week to introduce a line of printers for small businesses and home users. HP officials didn't return calls seeking comment.

And just ooe day after Dell's launch, IBM announced a "plug-and-print" wireless LAN adapter to make it easier for companies to hook end users to the printers IBM resells.

Dell was a reseller of HP's printers until last July, when HP eoded the deal because of expectations that Dell would enter the market. In September, Dell said it had signed Lexmark international Inc. to make Dell-branded printers.

Dell's models range in price from $139 to $839. They include software that monitors ink consumption and prompts users to order replacemeot cartridges from Dell. Greg Davis, sales director for Dell's imaging group, said users may buy cartridges from other suppliers. But Dell's cartridges are unique sizes and shapes, so aftermarket vendors won't be able to offer alternatives until they figure out how to reverse-engineer Dell's cartridges.

Dell's printers "will be accepted as good-enough technology" by Dell customers, said Peter Kastner, an analyst at Aberdeen Group Inc. But analyst Peter Grant at Dataquest Inc. said it will be years before Dell has any significant impact on HP's installed base. ◗

Tom Krazit of IDG News Service contributed to this report.

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MARK HALL ▪ ON THE MARK

Overworked (or Lazy) Sysadmins Get a . . .

. . . security tool that automates fixes of vulnerabilities in network servers and PCs. Citadel Security Software Inc. will release Hercules 2.0 on April 15. The upgrade will defend Solaris and Linux in addition to Windows. Hercules works with vulnerability-assessment products from companies like Internet Security Systems Inc. and Harris Corp. that identify security gaps on your network. Hercules collects all the problems in a single screen and lets a sysadmin fix them with a single mouseclick. And in the new release, **you can set policies to remediate known problems immediately** without notifying an admin. According to Carl Banzhof, Dallas-based Citadel's CTO, Hercules maintains the latest software patches for known bugs, slams shut open back doors in servers, secures insecure user accounts and properly configures misconfigured systems, among other automated fixes. He also points out that Windows servers have the most vulnerabilities, **even when weighted for their market share,** because so many sysadmins simply use out-of-the-box configurations, which historically have been "wide-open doors to networks." It's not as if those configuration lapses have been a big, dark secret, Banzhof admits. Lazy sysadmins, perhaps? Well, the CTO demurs, "they're an overworked bunch." ▪ Another vendor CTO has taken a slight swipe at users. Eric Newcomer at Waltham, Mass.-based Iona Technologies Inc. says vendor competition may derail the Web services standards efforts (see "Standards Stupidity," page 24). He argues, "Vendors naturally move toward creating competitive advantage," which imperils the standards process. But he thinks **it's possible users can save the day,** though he's skeptical you will step up to the task. "Users are going to have to take control in their procurement process," he says. "It's the only way standards will happen in Web services." So, will users reject Microsoft or IBM products when they veer away from industry standards? "It remains to be seen." **You can almost see him crossing his fingers.** ▪ If you think of your IT operations as a service business inside the company, the arrival today of Changepoint 8.0 should grab your attention. The software, which can integrate with Microsoft Project, does more than project management, according to Chuck Tatham, marketing VP at Changepoint Corp. in Richmond Hill, Ontario. It handles all aspects of workflow process and oversees **everyday interrupt-driven tasks that plague IT departments** and are overlooked by project management systems. The upgrade is now 100% Web-based and adds Oracle9i to Windows SQL Server as its database, along with support for Microsoft Outlook, among other improvements. Pricing averages about $1,000 per user. ▪ Paul Giardina, marketing veep at Cartesis SA in Paris, says today's release of its financial management application, Magnitude **Version 8.2, greatly improves the software's scalability** by adding multiserver capabilities and load balancing as well as support for DB2 and Oracle to its existing support for SQL Server. It will also add Crystal Analysis software as an option to the product. Finally, he says, the software now includes advanced budgeting tools that target competitors like SRC Software Inc. Before the year is out, Giardina says to expect Magnitude to include improved workflow operations and support for both the U.S. and European versions of Extensible Business Reporting Language. ▪ Portland, Ore.-based SRC must have been spying on its French competitor because it, too, announces a new product today. The new software, Advisor Series FI, lets bank employees at all levels perform financial modeling functions. Peri Pierone, SRC's VP of financial institutions, says that unlike other vendors' offerings, SRC "emphasizes ease of use without sacrificing sophistication." For example, he claims that with minimal training, branch managers will be able to create models on the effect of maturing money-market certificates of deposit and shifting interest rates. The application is **.Net-based and works with either SQL Server or Oracle databases.** It can run as a Web-only application or by using Microsoft Terminal Server or Citrix MetaFrame. And, for those of you who care, it's not from France. ◗

Dell Rolls Out First Printers; Rivals React

BY BOB BREWIN

Dell Computer Corp. made its entry into the printer market official last week by rolling out four models, including a pair of machines designed for use by corporate workgroups.

Rivals are responding to Dell's move. Analysts expect Hewlett-Packard Co. this week to introduce a line of printers for small businesses and home users. HP officials didn't return calls seeking comment.

And just one day after Dell's launch, IBM announced a "plug-and-print" wireless LAN adapter to make it easier for companies to hook end users to the printers IBM resells.

Dell was a reseller of HP's printers until last July, when HP ended the deal because of expectations that Dell would enter the market. In September, Dell said it had signed Lexmark International Inc. to make Dell-branded printers.

Dell's models range in price from $139 to $839. They include software that monitors ink consumption and prompts users to order replacement cartridges from Dell. Greg Davis, sales director for Dell's imaging group, said users may buy cartridges from other suppliers. But Dell's cartridges are unique sizes and shapes, so aftermarket vendors won't be able to offer alternatives until they figure out how to reverse-engineer Dell's cartridges.

Dell's printers "will be accepted as good-enough technology" by Dell customers, said Peter Kastner, an analyst at Aberdeen Group Inc. But analyst Peter Grant at Dataquest Inc. said it will be years before Dell has any significant impact on HP's installed base. ◗

Tom Krazit of IDG News Service contributed to this report.

Learn about it live!
See below.

Are you really as dense as we think you are?

As racks become increasingly populated with thinner, deeper servers, high power densities in your server room or data center can create havoc, from early equipment failures to expensive, forget-about-your-job-security downtime.

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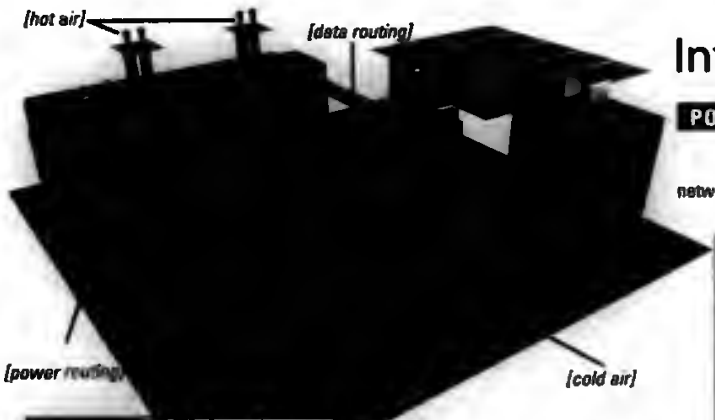
Winner of the Windows and .Net Magazine "2002 Reader's Choice Award for Best High Availability Solution" and the GCN "Best New Technology Award" at FOSE, March 2002. (Awarded to PowerStruXure™, which is now included under the InfraStruXure™ brand.)



High power densities can create hot spots, which cause equipment failures and expensive downtime.

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Air components designed for InfraStruXure™ are manageable via network technology, and feature a modern, reliable design with fewer moving parts.

InfraStruXure™

POWER RACK AIR

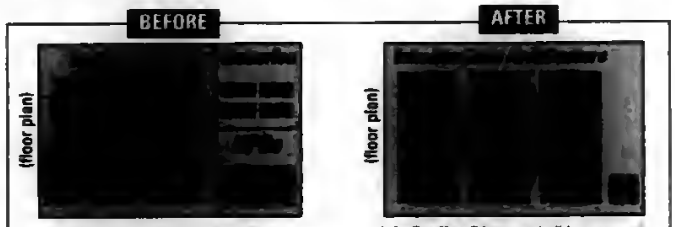
Open, adaptable and integrated architecture for on-demand network-critical physical infrastructure

"Our Video on Demand (VOD) servers are air cooled from front to back. The APC racks that house the InfraStruXure are also designed to cool from front to back. So the same racks can effectively house our power system and our servers."

Vince Pombo
Vice President of Engineering
Rich Flanders
Director of Engineering
Time Warner Cable

"If I had purchased the incumbent vendor's 3-phase upgrade model, I would have paid 75% more in service costs over the next four years and I would have had to utilize 50% more of my precious floor space."

Captain Timothy Riley
Support Services Division
City of Newport Beach Police Department



Traditional data centers are built out for future capacity and require a large amount of floor space that could be otherwise utilized. High power density racks create dangerous hot spots.

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Users Find Microsoft's Server OS Plans Unclear

Say feature packs OK provided there's no price increase

BY CAROL SLIWA

OPERATING SYSTEMS

MICROSOFT CORP.'S lack of clarity about plans for its future server operating system releases doesn't appear to be disturbing too many corporate users, who rarely rush to upgrade to the latest release anyway.

But they're certain to start clamoring if they find that any of the plans under consideration lead to cost increases. Several IT managers said last week that optional add-ons or feature packs might be helpful, but they don't want to pay for them unless they use them.

"The important thing is no new licenses," said Alejandro Bombaci, CIO at Empresas Polar, a consumer goods manufacturer and distributor in Caracas, Venezuela.

The prospect of separate downloads, overlays or option packs for the Windows release code-named Longhorn came to light two weeks ago when Brian Valentine, senior vice president of Microsoft's Windows division, spoke with *Computerworld*. Valentine said new server functionality will be needed to accompany the Longhorn client operating system release, which he said is due in 2005 [QuickLink 37215].

Noting that plans are "fluid," Valentine also said there might be a Longhorn server operating system release, even though Microsoft in November had taken great care to inform the media that Longhorn would be a client-only release. Valentine told *Computerworld* that the November pronouncement was "a bit premature."

Jay Jamison, director of product planning in the Windows server group, confirmed last week that Microsoft is considering a full range of options, including a new server operating system, a supplemental add-on similar to the option pack that shipped after Windows NT 4.0 or an "out-of-band feature release" to the server operating system.

Jamisoo said Microsoft could make available a feature in the same manner that it will release the group policy management console after the April 24 launch of Windows Server 2003, which was released to manufacturing last Friday. Several other components for the new server operating system will also be delivered in piecemeal fashion following the product launch (see box).

But Valentine said it's too early to tell how the server enhancements expected along with Longhorn will be packaged and priced.

"If they're going to bundle software that I won't use and then increase the price of the base operating system, then I've got a problem," said Neville Teagarden, CIO at Navigant International Inc. in Englewood, Colo. "If it becomes too complicated to determine the actual server pricing, software configuration and license compliance because everything is a la carte, then that's also a problem."

Teagarden said he prefers a full server operating system release because he wants solid integration testing done by Microsoft "rather than having to figure out which combinations of software work or don't work on our own."

Other users, however, said optional feature packs or add-ons might be useful. Bill Finefield, CIO at Navy Exchange Service Command in Virginia Beach, Va., said it would be helpful to be able to choose what his company could use "vs. what just takes up space," as long as the add-ons or feature packs are easy to install and deploy.

Jim Prevo, CIO at Green Mountain Coffee Roasters Inc. in Waterbury, Vt., said one potential downside is the increased complexity of maintenance for both Microsoft and his company. "They would have more variability in the configuration of their installed base, and that would make their patches and fixes harder to maintain," he said.

Uncertainty Remains

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Gartner Inc. in Stamford, Conn., however, predicts that there will be server function packs, rather than a full Longhorn server operating system release.

"Our belief is that's too big — too much too quickly," said Gartner analyst Tom Bittman, noting that Windows Server 2003 is just coming out. "People are not going to want to absorb a full release." ▶

Windows Server 2003 Add-ons

Features shipping after the April 24 launch include:

- Group Policy Management Console DUE MID-Q4
- "Greenwich" instant-messaging technology DUE MID-2003
- Windows Rights Management Services DUE END OF YEAR
- Windows SharePoint Services DUE LATE Q4

Proposed Air Passenger Screening System Alarms Privacy Advocates

Puts civil rights at serious risk, groups say

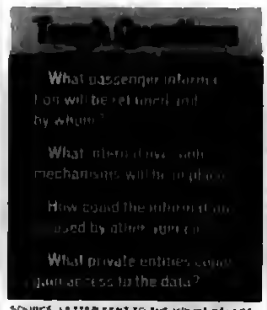
BY JAIKUMAR VIJAYAN

A coalition of privacy and civil rights organizations is asking Congress to stop the deployment of the Transportation Security Administration's (TSA) recently announced airline passenger profiling system.

In a letter addressed to the chairman of the House Select Committee on Homeland Security last week, coalition members urged Congress to carefully assess the program's effectiveness and its privacy implications before allowing the TSA to move forward. Coalition members include the Electronic Privacy Information Center (EPIC) and American Civil Liberties Union.

The TSA is believed to have started testing a second-generation airline passenger profiling system known as the Computer Assisted Passenger Pre-Screening System II (CAPPS-II) in early March.

TSA has asked Delta Air Lines Inc. to provide assistance during early infrastructure testing by providing it with passenger data relating to name, address, telephone number and date of birth of passengers.



SOURCE: LETTER SENT TO THE HOUSE SELECT COMMITTEE ON HOMELAND SECURITY BY COALITION OF PRIVACY AND CIVIL RIGHTS GROUPS

The system is being developed in collaboration with Lockheed Martin Management and Data Systems. It can confirm a passenger's identity and any potential security threat the passenger might pose in less than five seconds, according to a description of the system on the TSA's Web site.

Under the plan, the TSA will require every U.S. commercial air carrier to supply it with passenger information collected during the reservation and ticketing process. This information will then be combined with credit and other personal data contained in government and commercial databases to arrive at a risk score for every passenger.

The proposed plan is evoking a maelstrom of protest from privacy and civil rights groups that are questioning the efficacy of such a profiling system and charge that it's a violation of privacy.

"There are serious civil liberties issues with any data mining program whose result will be used to determine whether Americans are eligible to fly or not," said Lee Tien, a senior staff attorney at the Electronic Frontier Foundation, a privacy rights organization in San Francisco.

There are also serious questions about whether such profiling is effective, said Chris Hoofnagle, a deputy consul at the EPIC in Washington. "One should ask why we should build this incredible system of identification, authentication and profiling when we could take the money and focus on less-invasive and proven technologies" such as bomb-detection equipment, be said. ▶

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If you're busy monitoring your servers, who's watching your business?

The new HP ProLiant DL740 8-way with hot-plug RAID memory.

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- Up to 64GB addressable memory
- Groundbreaking F8 chipset
- 6-64 bit/100 MHz PCI-X slots
- Integrated Lights-Out Standard (iLO) for Remote Server Mgmt

The new HP ProLiant DL760 G2 8-way with hot-plug RAID memory.

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- Up to 64GB addressable memory
- Groundbreaking F8 chipset
- 10-64 bit/100 MHz PCI-X, 1-64 bit 33 MHz slots
- Remote Insight Lights-Out Edition II (optional) for Remote Server Mgmt.

What challenges do you face today? Decreasing budgets? The lurking possibility of downtime? It's hard enough to focus on moving your business forward when you're constantly looking over your shoulder to see if everything is up and running.

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At the end of the day, you'll have more control over your infrastructure, help avoid unplanned downtime and reduce overall maintenance costs. Not to mention freeing yourself up for more important things.

To learn how HP ProLiant servers can be a part of maximizing your company's uptime, download CMP's executive brief on high availability at www.hp.com/go/proliant8S or call 1-800-282-6672, option 5, and mention code YPH.

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BRIEFS

Space Agency Names New CIO

NASA named Patricia Dunnington as its new CIO, effective immediately. Dunnington, who has been the agency's deputy CIO since August, takes over management responsibility from acting CIO Paul A. Strassmann. Strassmann, a former *Computerworld* columnist, ran NASA's IT department since July. A NASA spokesman said Strassmann plans to retire to private life.

Microsoft Warns of Flaw in Windows

Microsoft Corp. warned that a security flaw in a network component of Windows XP, 2000 and NT 4.0 could expose systems to denial-of-service attacks. The problem lies in Microsoft's implementation of a remote procedure call protocol that lets applications on different computers communicate with one another. The company has posted a patch on its Web site.

Huawei Admits It Used Cisco Code

A week after rejecting Cisco Systems Inc.'s allegations in January of patent infringement and technology copying, networking vendor Huawei Technologies Co. acknowledged in a court filing that one of its employees obtained some Cisco source code in 1999. Shenzhen, China-based Huawei said it's pulling from the U.S. market products built with the source code.

Short Takes

Citing information uncovered by federal investigations about its accounting practices, NETWORK ASSOCIATES INC. in Santa Clara, Calif., said it will restate its financial results for 1998 through 2000. . . . Ottawa-based software vendor COREL CORP. said it's talking to two venture capital firms about a possible takeover.

Pennsylvania Delays Portion of SAP Project

State pushes payroll module back by nine months; other apps work continues

BY MARC L. SONDINI

STATE OFFICIALS in Pennsylvania have put the brakes on a major piece of a $160 million rollout of SAP AG's enterprise resource planning (ERP) applications because of software customization, system integration testing and end-user training requirements.

Pennsylvania Secretary of Administration Bob Barnett last week said the state government has temporarily halted the installation of the human resources modules that are part of a planned statewide SAP R/3 implementation. The go-live date on those applications was pushed from next month to January.

The delay underscores the findings of a report that's being released today by Nucleus Research Inc. in Wellesley, Mass. In the report, which was based on interviews with 21 of SAP's customers, Nucleus said returns on investment can be hard to achieve on R/3 rollouts — especially when users customize the applications.

According to Nucleus, 12 of the 21 users said they hadn't achieved an ROI after working with R/3 for an average of nearly three years. In particular, said Nucleus analyst Rebecca Wetteman, companies that customized R/3 slowed down their deployments and increased their costs.

But SAP users aren't alone in facing such challenges, said Wetteman. Nucleus recently released similar reports about users of Siebel Systems Inc.'s customer relationship management software and i2 Technologies Inc.'s supply chain applications.

In Pennsylvania, work has bogged down on SAP's payroll application. Barnett said the software itself isn't the problem. But, he added, it required tweaking to handle thousands of work schedules and hundreds of pay grades for the state's 80,000 employees.

The ERP system is also requiring more extensive training for end users than expected, Barnett said. In addition, more testing is needed to ensure that the payroll software can interoperate with a separate accounting system used by the state treasurer's office.

Despite the payroll setback, Barnett said Pennsylvania "is going on a faster timetable than others doing a major project like this." The project also involves the ongoing installation of financial, procurement and other applications to replace a variety of homegrown and third-party products.

William Wohl, a spokesman for SAP America Inc. in Newtown Square, Pa., said the software vendor was encouraged by Pennsylvania's decision to slow down the payroll installation. "They are setting an example to other state governments to learn to take their time and do it right," he said.

In response to the Nucleus report, Wohl acknowledged that R/3 projects can be complex — not because of the software itself but because ERP rollouts usually require "a whole new way of thinking" about business processes.

Oracle Modifies Pricing, Bundling of Applications

Vendor drops $250K spending requirement

BY MARC L. SONDINI

Looking to boost sales of its enterprise applications, Oracle Corp. last week announced new software licensing terms that it said will make it easier for users to qualify for the flat-fee pricing the company put in place 14 months ago.

But Oracle is also removing some products from the software bundle covered by the flat-fee approach, which lets users license a set of the company's E-Business Suite applications for a single price. The modules being excised, which are primarily user self-service tools in areas such as human resources, will now have to be bought separately, Oracle said.

On the plus side, Oracle is eliminating a requirement that customers spend at least $250,000 to qualify for the all-encompassing pricing. It's also reducing from 20% to 10% the minimum number of employees for which a company needs to buy licenses.

"We've streamlined [the pricing] and made it more flexible, not only for smaller customers, but [also for] larger customers," said Jacqueline Woods, vice president of global practices at Oracle.

Company officials decided that the previous user-licensing minimum "was more than the market could handle under the current economic conditions," Woods said.

The changes could help some companies reduce their licensing costs, Woods said (see chart). But users will still be able to buy any of Oracle's applications on an individual basis if that's less expensive than the flat fees are, she said.

In addition to the pricing changes, the company renamed the software E-Business Suite 2003.

At the independent Oracle Applications Users Group (OAUG) in Atlanta, the jury is still out on the new pricing scheme. "We have to keep in mind the global aspect of this and wait for input from members," said Pat Dues, an OAUG board member who works as a project officer at the Las Vegas city manager's office.

Frank Milano, CIO at Terracon Inc., an engineering consulting firm in Lenexa, Kan., said he may consider using the new licensing approach if he expands his installation of Oracle's enterprise resource planning applications.

"As a CIO, I always think that their pricing is too high," Milano said. But the licensing changes make it look like Oracle is "starting to become market-driven," he added.

Like SAP AG, Oracle has had a mishmash of pricing structures because it offers such a wide range of applications, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif. The flat-fee pricing scheme was designed to address that, but Greenbaum said the $250,000 minimum buy-in figure was a deterrent to smaller companies.

James Niccolai of the IDG News Service contributed to this report.

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www.veritas.com/vision/register.html
VERITAS

Gartner: Business Units to Get More Control of IT Spending

Some IT execs say it's already happening and view it as a positive development

BY THOMAS HOFFMAN
SAN DIEGO

GARTNER INC. analysts last week predicted that business units will gain control over a majority of discretionary spending on technology this year. If that happens, it could force IT departments to meet project milestones set by business managers before they get funding to pay for additional work.

Some attendees at Gartner's Symposium/ITxpo 2003 conference here said they don't expect that scenario to play out in their organizations, at least in the short term. But other IT executives said they have already seen the trend emerge — and it has been to their advantage thus far.

"I'm already seeing some of that occur in our organization, and it's helpful," said Craig Betts, director of enterprise resource planning and distribution technology at Sierra Pacific Resources in Reno, Nev. Although Sierra Pacific has shifted control of IT spending only to a few business units, Betts said the change has helped his company's IT department by giving business managers responsibility for planning and overseeing IT project requirements.

"When we own everything, I have to handle the budget, and if the business units aren't aligned with IT, they hand everything over to us," Betts said. Without direct input from business leaders on their IT needs, keeping requirements-planning efforts on track is "a shot in the dark," he added.

An IT spending shift also has started at Industrie Canada, the Canadian department of commerce. That's according to Sean Barr, industry sector officer for the agency's Spectrum, Information Technologies and Telecommunications Gateway division, which is the Canadian equivalent of the U.S. Federal Communications Commission.

"It's been good for me and our business unit when it has occurred, because there's more of a direct path for funding," Barr said. "But I can see how this could be a problem for other CIOs."

Carl Schulz, an IT consultant at Delta Corporate Services Inc. in Parsippany, N.J., said a growing number of companies are giving business units control of discretionary IT spending — the money above and beyond what's needed to run day-to-day IT operations. Schulz said he has also seen business units "place their own people in an IT organization to oversee spending and manage projects."

But other IT managers at the conference said project purse strings either remain in their grips or have even been returned to them.

"We started taking back control of some IT spending that was taking place in business units, where [rogue] 'IT entities' had cropped up," said an IT manager who works for a branch of the U.S. military and requested anonymity. "In some instances, business units will receive funding for IT projects and direct that to us."

Some companies have taken approaches that combine IT and business-unit control over spending. Four years ago, The Northwestern Mutual Life Insurance Co. began moving to a funding model in which business-unit leaders sit on a corporate planning board that decides on all discretionary IT spending before funding is allocated to the IT department. That setup "has worked out very well for us," said John Hillmer, director of technology services at the Milwaukee-based insurer. ▶

Other Gartner Predictions

- Underfunding necessary IT upgrades today will lead to higher costs once the economy improves and demand for IT products increases.
- By 2006, 30% of data processing will be done through utility-based computing models that let companies pay for computing resources as needed.

REAL-TIME CHANGES

Conference attendees said delivering real-time data to business executives requires big changes outside of IT

QuickLink 37350
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Correction

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Omgeo Readies Web Portal For Allocating Stock Trades

Tool potentially reduces manual communications

BY LUCAS MEARIAN
NEW YORK

Omgeo LLC this week plans to begin beta-testing a Web-based tool aimed at boosting straight-through processing of trades between brokerages and investment managers by eliminating the need for the firms to communicate via fax and telephone to allocate shares.

Boston-based Omgeo, which offers an automated trade-matching service, announced the allocation management engine last week and said it should be ready for commercial release by midyear. The tool is an end-user portal that's based on XML and Java 2 Enterprise Edition and will be run on Solaris servers with BEA Systems Inc.'s WebLogic application server software.

Omgeo officials said at a press conference here that independent investment management firms will be able to use the Allocation Manager portal free of charge. The company, which is jointly owned by The Depository Trust & Clearing Corp. in New York and Thomson Financial in Boston, plans to charge brokerages about $1 for each trade they process via Allocation Manager.

David Oxenstierna, an executive director at Morgan Stanley in New York, said that could add up to thousands of dollars a day. But he added that he's willing to pay the fee in order to streamline the processing of transactions with investment firms that currently lack automated trade-matching capabilities.

"To us, [using faxes and phones] is an inefficient way to process trades," Oxenstierna said. "It represents [added] operational costs and the risk of mishandling things."

Gordon Marchand, vice president and treasurer at Yeager, Wood & Marshall Inc., a New York-based investment firm that manages about $800 million in assets, said he piloted Allocation Manager and likes its ease of use. For example, the software lets users set up drop-down lists of investment clients that "can be customized and configured to our needs," Marchand said.

But Allocation Manager has some gaps that need to be filled, added Marchand, whose firm is among the thousands of small and midsize investment managers that continue to manually transmit trade-allocation data to brokerages.

FEATURES

A Web-based system that investment managers can use to electronically submit trade allocation data to brokerages

Access to Omgeo's trade matching engine and its Alert system, a database containing industrywide trade settlement instructions

Omgeo has to add the ability to print and save transaction data to meet the U.S. Securities and Exchange Commission's record-keeping rules, Marchand said. Allocation Manager also needs to be able to automatically notify investment managers when trades have been executed, he said. In addition, major brokerages "have to adopt this thing," he noted. "Otherwise, we're still going to be in a fax-and-phone environment."

Omgeo developed Allocation Manager with financial backing from four brokerages: Morgan Stanley, Credit Suisse First Boston Corp., J.P. Morgan Chase & Co., and UBS Warburg. Adam Bryan, Omgeo's president and CEO, last week said 21 other brokerages have signed up to use the portal.

Bryan added that he will continue to meet with investment managers to fine-tune the software before it's made available in May or June. Omgeo is exploring technologies that could be used to send trade-execution notices to pagers or via e-mail, he said. ▶

Gartner: Business Units to Get More Control of IT Spending

Some IT execs say it's already happening and view it as a positive development

BY THOMAS HOFFMAN
SAN DIEGO

GARTNER INC. analysts last week predicted that business units will gain control over a majority of discretionary spending on technology this year. If that happens, it could force IT departments to meet project milestones set by business managers before they get funding to pay for additional work.

Some attendees at Gartner's Symposium/ITxpo 2003 conference here said they don't expect that scenario to play out in their organizations, at least in the short term. But other IT executives said they have already seen the trend emerge — and it has been to their advantage thus far.

"I'm already seeing some of that occur in our organization, and it's helpful," said Craig Betts, director of enterprise resource planning and distribution technology at Sierra Pacific Resources in Reno, Nev. Although Sierra Pacific has shifted control of IT spending only to a few business units, Betts said the change has helped his company's IT department by giving business managers responsibility for planning and overseeing IT project requirements.

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Continued from page 1

Convergence

in Oakland, Calif., said the health care provider plans to test OpenScape in a lab and then run a pilot project that's expected to last through year's end. If the software works as promised, OpenScape could improve productivity for many of Kaiser's 135,000 workers and reduce the number of devices that the company has to buy for them, Crawford said.

"Taking voice mail, e-mail and IM and putting them into a portal leverages all the disparate capabilities we have today and drives efficiencies," he said. "So my question is, Can Siemens really pull it off?"

Crawford said he needs to evaluate how Kaiser's business units would deploy and use the product and what it would cost to implement. For example, the software could require the addition of new Windows servers and some restructuring of the company's network architecture. Kaiser has also been approached by a Baby Bell offering OpenScape-like functionality as a monthly service, Crawford said, declining to identify the company.

Instead of running on conventional telecommunications switches, OpenScape will be server-based, Straton said. The software will initially work only with Microsoft Corp.'s forthcoming Windows Server 2003 operating system. But Straton said Siemens plans to add Unix and Linux support within the next two years.

OpenScape, which supports the emerging Session Initiation Protocol, is due for commercial release in September at a cost of $400 per user (see chart). But Siemens is taking a go-slow approach with the technology. Straton said the company initially plans to limit marketing to about 50 customers for up to nine months of beta testing and trials.

Chris Kozup, an analyst at Meta Group Inc. in Stamford, Conn., said one question that needs to be answered is how scalable OpenScape will be in its first release. He noted that Siemens is pushing the software for use only by branch offices, departments and workgroups at this point.

Straton said the technology is being pitched for small installations for now because it requires a cultural shift that could be hard for entire companies to make. The software will initially be able to handle up to 500 users per server and 5,000 in a linked setup, he said.

Verizon spokesman Bill Kula said his company is working with Microsoft and Sun Microsystems Inc. to develop some of the same capabilities that are in OpenScape, including connections between voice and text messaging using any device. The technology will be used as part of a service that's due to be announced this spring or summer, Kula said. He added that Verizon has trials under way with internal workers and some large U.S. businesses.

Analyst Kneko Burney at In-Stat/MDR in Scottsdale, Ariz., expects several telecommunications carriers to offer converged communications services this year. But she wouldn't name any of the carriers. ▶

OpenScape Stands Out, Analyst Says

Vendors such as Cisco Systems Inc., Nortel Networks Ltd. and Pleasanton, Calif.-based Polycom Inc. already sell products that support some levels of communications convergence, said Meta Group analyst Chris Kozup. But none of those offerings is as complete as OpenScape is, he added.

As an example of how OpenScape could be used, Siemens officials said a salesman could have voice mail messages from a hot business prospect routed directly to a device such as a pager, smart phone or laptop PC. Under that scenario, OpenScape could be set up to convert the voice mail messages to text that would be sent to the designated device as an instant message or e-mail. Other callers would be able to leave only regular voice mail messages.

Douglass Crawford, director of network services at Kaiser Permanente, said those kinds of capabilities could be a boon for end users. But he also sees a potential downside if message-delivery problems occur.

A voice mail problem can be traced to a single source now, but a similar snafu that affects OpenScape users might involve other communications systems that are connected to the software, Crawford said. "Complex systems have more things to break," he noted.

– *Matt Hamblen*

PRODUCT DETAILS

OpenScape Version 1.0

CAPABILITIES: Integrates and synchronizes messaging, calendaring and real-time collaboration tools with corporate applications

SUPPORTED END-USER DEVICES: Desktop and laptop PCs, handheld devices, cell phones and IP phones

RUNS ON: Microsoft's upcoming Windows Server 2003 and Greenwich real-time communications server software

LIST PRICE: $400 per end user; due for beta testing in May and general release in September

Vendors Offer Tools to Track License Compliance, Usage

IT managers could use software to root out unneeded apps

BY MATT HAMBLEN

Two software vendors last week separately announced products that IT managers can use to track software license compliance and to identify licenses that are no longer needed.

Novadigm Inc. in Mahwah, N.J., released a tool called Radia Usage Manager that tracks software use on servers, desktops and laptops. The software works with existing Novadigm products that manage the deployment of new applications, said George Kellar, Novadigm vice president of marketing.

Meanwhile, Softricity Inc. in Boston introduced SoftGrid Dual-Mode, a product primarily designed for use in deploying and managing Windows and Citrix MetaFrame applications. But the technology's ability to track license compliance is "icing on the cake," said a spokeswoman for Softricity.

Big Savings

Royal and SunAlliance USA plans to install Radia Usage Manager next year, when funding for the project is due, said Roger Thibodeau, IT executive at the property and casualty insurer in Raleigh, N.C. Thibodeau said he expects to save millions of dollars by using the Novadigm software to find unneeded licenses.

He based his estimate on a laborious manual survey of license usage among 7,000 end users. The survey, done in January and February, uncovered $500,000 that could be saved by not renewing licenses for 12 of the company's 131 commercially licensed applications, Thibodeau said. Many users had installed applications and never used them, he noted.

Radia Usage Manager will be used to examine the remaining 119 applications. The manual effort on the first 12 took a pair of IT workers two months to complete. By comparison, the software should take only about a day to count who uses all the other applications, Thibodeau said.

The Northwestern Medical Faculty Foundation in Chicago will begin rolling out SoftGrid Dual-Mode this week for 1,500 doctors and other users, said Julie Otten, the foundation's director of information systems. The organization is a nonprofit group of doctors and health care professionals who provide clinical care and are affiliated with Northwestern University Medical Center.

> "In the past, we'd buy 100 more licenses when we ran against the limit, but this way we can fine-tune what we need to buy."
>
> **JULIE OTTEN,** DIRECTOR OF INFORMATION SYSTEMS, NORTHWESTERN MEDICAL FACULTY FOUNDATION

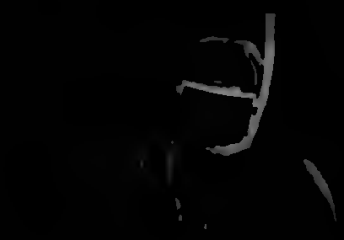
The Softricity product streams applications to users from a server instead of installing them on end-user PCs. That should help in tracking the usage of applications, Otteo said. "In the past, we'd buy 100 more licenses when we ran against the limit, but this way we can fine-tune what we need to buy," she said.

Fred Broussard, an analyst at IDC in Framingham, Mass., said capabilities similar to those developed by Novadigm and Softricity are also offered by Microsoft Corp., Computer Associates International Inc., IBM's Tivoli unit and Altiris Inc. in Lindon, Utah.

But Ronni Colville, an analyst at Gartner Inc. in Stamford, Conn., said Novadigm's technology for tracking software license inventories appears to be the most comprehensive now available. ▶

THERE'S SHALLOW INTEGRATION AND THERE'S

TEGRATION.



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Feds Test Network to Send Alerts to M.D.s

BY BOB BREWIN

The U.S. Department of Health and Human Services (HHS) has begun testing the use of a health care data-delivery network operated by ePocrates Inc. to transmit bioterrorism-related alerts to doctors equipped with Palm OS-based handheld devices.

HHS and San Mateo, Calif.-based ePocrates launched the three-month pilot this month. The agency is finalizing the data files it plans to distribute for the test, said Dr. John Whyte, the medical director of an HHS panel set up last year to explore new technologies. But HHS could immediately send data via ePocrates' network if bioterrorism attacks occurred, he added.

Bob Quinn, chief technology officer at ePocrates, said that about 10,000 emergency room physicians and infectious disease and primary care specialists will participate in the pilot. EPocrates plans to launch a version of its software for Pocket PC devices in April, but Quinn said the doctors involved in the test will use handhelds running Palm Inc.'s operating system.

HHS will transmit alerts to ePocrates as Word documents in e-mail attachments, Quinn said. The company will store the alerts in a central Oracle database and convert them into files that can be read by Palm devices when doctors synchronize their handhelds with the database.

Quinn said ePocrates, which runs a mix of Unix and Windows systems, can tailor information to subscribers based on parameters such as medical specialty and location. Eventually, he added, ePocrates wants to provide HHS with an extranet tool so the agency can transmit alerts directly.

Whyte, who works for the HHS Council on Private Sector Initiatives to Improve the Security, Safety and Quality of Health Care, wouldn't disclose the cost of the pilot program or say how quickly HHS plans to broaden distribution of the alerts if the test is successful.

About 250,000 doctors and 450,000 other medical workers have signed up to use the ePocrates network. The company stores information about prescription drugs in its database and sends out its own alerts with updated drug safety data and news.

The Atlanta-based Centers for Disease Control and Prevention (CDC), an arm of HHS, already operates a network that distributes information to public-health departments. Whyte said the deal with ePocrates will let HHS quickly send alerts about potentially threatening biological agents to doctors who aren't tied into the CDC's network.

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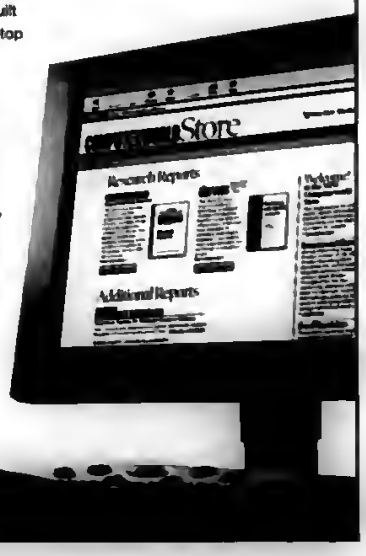

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WHEN FAILURE IS NOT AN OPTION
SDLT 320

Microsoft Exec Eyes Midsize Users for Apps

Burgum says vendor to focus on 'high-volume' business applications

BY MARC L. SONGINI

Douglas Burgum, *a senior vice president at Microsoft Corp. who heads the company's business solutions division, spoke about the unit's enterprise applications strategy during an interview at Microsoft's Convergence 2003 conference in Kissimmee, Fla., this month.*

Can you clarify where Microsoft sits in the corporate applications market? If you drew a bell curve for us, the center is in the midmarket. We're not focused on selling applications through a direct sales force to the world's largest corporations. Those applications are very expensive and require ongoing customization. We're in the business of high-volume, low-price software sold through partners.

Other parts of Microsoft do business with rival applications vendors such as SAP and PeopleSoft. Is that an issue for your unit? We want to work with those folks on our [underlying technology] platforms. We want them to adopt our tools that support XML connectivity and offer customers support for .Net. To the degree that SAP has announced aggressive plans in the midmarket [with its SAP Business One initiative], we will find SAP a partner, but also we'll be competing with them for customer accounts.

You recently shipped your first customer relationship management applications. Any misgivings about taking on Siebel Systems CEO Tom Siebel? We're not taking him on. He sells directly in deals that are worth multiple millions, with lots of rich customizations. That's not the market we're pursuing. We see Siebel as a strong partner doing nice work with our SQL Server database and Windows and .Net and our support tools.

Do you view any of the applications that Microsoft has bought over the past few years as redundant? No. The products won't fade away in any near- or midterm time frame. There are large customer bases for Solomon and Navision and Axapta and Great Plains. We've got a deep commitment [to them] and are planning for the next generation. We're not going to try to merge those lines together in the traditional sense, so much. [But] to some degree, the future generation will have a migration path to one single global code base.

Oracle Offers to Fund Linux Efforts

BY JAMES NICCOLAI

Oracle Corp. last week said it plans to pay out about $150 million per year in an effort to encourage software vendors to develop Linux applications for its Oracle9i databases.

"We've heard from our customers that the things inhibiting their movement to Linux are technical support, which we addressed last summer, and also the availability of applications," said Bob Shimp, vice president of Oracle9i database marketing. "So we're providing technical and financial incentives to [software vendors]."

Oracle will give qualifying software vendors $2 for every $1 that they invest in developing and marketing Linux software, Shimp said. The company will also share its customer list with vendors and let them market their Linux offerings through its Web site.

Oracle expects to continue spending $150 million annually on the program for "a number of years," Shimp said. In a related effort, company officials said Oracle's own developers are working on proposed additions to the Linux kernel aimed at making the operating system more suitable for use with Oracle9i in large corporate applications.

Ensuring the availability of a broad set of applications is a crucial part of Oracle's strategy to use Linux to compete against Microsoft Corp.'s SQL Server database, said Stephen O'Grady, an analyst at RedMonk in Hollis, N.H.

James Niccolai writes for the IDG News Service.

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*When compared to LTO 1, AIT 3 and Mammoth 2 drives. Where mentioned, capacities and transfer rates are compressed.

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[1]IBM eServer pSeries 650 (8 processors, POWER4+, 1.45 GHz, 1.5 MB L2 cache per 2 processors, 64 GB memory) was certified by SAP on 1/16/03 with the following SAP Standard 4.6C SD application benchmark results: 1,220 SD benchmark users, 1.95 sec. average dialog response time, 122,670 fully business processed line items/hour, 368,000 dialog steps/hour, 6,130 SAPS, CPU utilization of 98% with DB2 v8.1 and AIX 5L version 5.2. Sun Microsystems Sun Fire V880 (8 processors, UltraSPARC III, 900 MHz, 8 MB L2 cache, 32 GB memory) was certified by SAP on 6/17/02 with the following SAP Standard 4.6C SD application benchmark results: 600 SD benchmark users, 1.96 sec. average dialog response time, 60,330 fully business processed line items/hour, 181,000 dialog steps/hour, 3,020 SAPS, CPU utilization of 99% with DB2 v7 and Solaris 8. Results posted at http://www.sap.com/benchmark. [2]U.S. list price as of 2/26/03 for p650 Express Configuration with AIX 5L, 2-way 1.2 GHz POWER4+. Prices are subject to change without notice. Reseller prices may vary. IBM, the e-business logo, AIX 5L, DB2, eServer, POWER4+, pSeries and e-business on demand are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. UNIX is a registered trademark of The Open Group. Other company, product and service names may be trademarks or service marks of others.
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MARYFRAN JOHNSON

Standards Stupidity

GIVEN THE CHOICE of watching paint dry or paying attention to the techno-political infighting that goes on within industry standards bodies, most of us would opt for the paint. But wheo there's big trouble brewing over Web services — between the Web's leading standards organizatioo and the dominating duo of IBM and Microsoft — it's time to take notice.

Last week, Microsoft dropped out of a working group at the World Wide Web Consortium (W3C), opting, as IBM has, to go its own way in developing a "choreography" standard for Web services. This is bad news for future users of products depending on this particular standard to interoperate.

"The most controversial area in Web standards now is the choreography or orchestration of the services," says Eric Newcomer, chief technology officer at Iona Technologies Inc. and an active member nf the W3C. "It's about how to combine them rapidly and change the combinations to change business processes quickly and create affordable integration."

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MARYFRAN JOHNSON

Standards Stupidity

GIVEN THE CHOICE of watching paint dry or paying attention to the techno-political infighting that goes on within industry standards bodies, most of us would opt for the paint. But when there's big trouble brewing over Web services — between the Web's leading standards organization and the dominating duo of IBM and Microsoft — it's time to take notice.

Last week, Microsoft dropped out of a working group at the World Wide Web Consortium (W3C), opting, as IBM has, to go its own way in developing a "choreography" standard for Web services. This is bad news for future users of products depending on this particular standard to interoperate.

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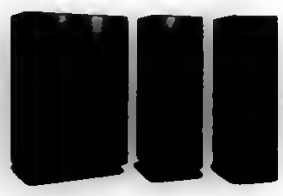

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Q&A

Making the Connection

Netegrity CTO Deepak Taneja (left) discusses the future of identity and access management technologies in an environment transformed by the Internet and in which the definition of an application is changing. **Page 34**

SECURITY MANAGER'S JOURNAL

Porn Policy Collars a Million-Dollar Customer

Vince Tuesday decides that strict policies against pornographic e-mail messages will have to bend a bit when one offender turns out to be a rep for his company's best customer. **Page 40**

OPINION

Scope Creep and Exchange Server 2003

Realizing the full benefits of Microsoft's latest e-mail server software will require much more than just upgrading existing e-mail servers, writes Robert L. Mitchell. **Page 42**

Users say they've experienced a few glitches, but the high-end operating system has largely delivered on its reliability and scalability promise. By Carol Sliwa

LIVING WITH DATACENTER SERVER

RUNNING MISSION-CRITICAL APPLICATIONS on an unproven operating system is too dicey for many corporations to stomach. But three trailblazers now running Windows 2000 Datacenter Server say they had good reasons to consider it.

Microsoft Corp.'s Windows Datacenter Program calls for well-established hardware makers to sell, support and test the product in configurations guaranteed to produce the sort of reliable and stable results that customers of rival Unix systems expect.

And Windows Datacenter Server is a logical consideration for companies using Microsoft software, particularly those pushing the limits of eight-way boxes running SQL Server on Windows 2000 Advanced Server. Datacenter Server scales to 32 processors, and its license allows for as many partitions as desired on a single physical server.

So far, the only choice for a 32-way box has been the ES7000 from Unisys Corp. in Blue Bell, Pa. But three early adopters who were glad to find the ES7000 say their Datacenter-based systems have largely delivered on the promise of high availability, scalability and reliability.

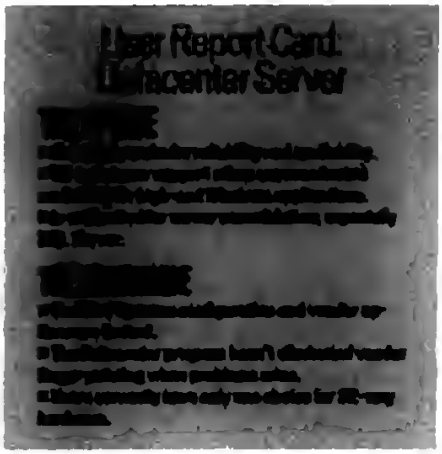
MARY KAY CONSOLIDATES SQL

Mary Kay Inc. in Addison, Texas, purchased a 32-way ES7000 server in April 2001 to cope with the explosive growth of its online offerings.

Prior to that, the cosmetics, skin care and dietary products manufacturer and distributor had clustered four-way servers, upgraded processors and shifted from Windows NT to Windows 2000 Advanced Server.

But Morris Koeneke, database services manager, says distributing databases evenly was becoming difficult. Database replication was gobbling up resources. Single-user interactions could trigger requests to multiple database servers, slowing the network. And Mary Kay was outgrowing servers before its leases were up.

The company went live in June 2001 with its ES7000, initially on Windows Advanced Server. Using Unisys tools, IT staffers carved up the 32-processor, 32GB frame into four eight-CPU partitions and configured them as two clusters: one for SQL Server 2000 production databases and the other for testing, staging and fail-over.



Mary Kay was able to consolidate four production database servers to two, but it soon needed more horsepower and shifted to Windows Datacenter in April 2002. Administrators converted the four eight-way partitions to two 16-CPU, 16GB partitions: one for the production SQL Server and the other for backup.

"Datacenter is basically Advanced Server on steroids," Koeneke says. "It's the same operating system. It just has gates opened up that let you manage large servers."

Consolidating to a single SQL Server instance for e-commerce improved performance and eliminated redundant databases and replication headaches, says Koeneke. Processing capacity went from 1,800 orders per hour to more than 3,000. And Koeneke says problems were scarce and insignificant compared with prior Windows versions.

Mary Kay purchased three more ES7000s last year for a supply chain initiative. One has a 16-CPU instance of SQL Server and two eight-CPU partitions of BizTalk Server. Another has SQL Server running on 12 CPUs, clustered to the 16-CPU SQL Server on the other box, and five four-way partitions for Mary Kay's J.D. Edwards & Co. enterprise resource planning (ERP) system. The third box is for development and testing.

Plans call for the BizTalk and ERP database servers to be consolidated. Koeneke says he also hopes to run a four-way Datacenter cluster with three active 16-way nodes and one passive 16-way node hosting all of the company's databases.

Koeneke says he isn't convinced that total cost of ownership is cheaper with Datacenter Server than it would be with Unix, but given Mary Kay's commitment to Microsoft products, Datacenter made sense. His only gripe is with the Datacenter program, which Microsoft is revamping. Under the existing program, the hardware provider is supposed to be the single point of contact for problems, yet Koeneke says he often waits for answers as vendors point fingers.

Koeneke would also like more choice in the subsystems that attach to his Datacenter Server beyond those in the exact configuration Unisys tested. "They tell us how great everyone gets along and that we have one throat to choke," he says. "But the reality is we get total certification on a solution provided by one OEM. Our flexibility is limited."

PREMERA DOWNSIZES

Premera Blue Cross in Mountlake Terrace, Wash., wanted to replace the homegrown, mainframe-based core systems suite that its 3,000 employees used to administer membership, enrollment and claims. The $3 billion health insurance company, with 1.4 million members in the Pacific Northwest, already used Windows on the desktop; has about 450 Windows servers running e-mail, file-and-print services and various applications; and planned to use Microsoft's development environment.

CIO Alan Smit says he saw an opportunity to focus on a single vendor, even though he shared the general industry skepticism about Microsoft's ability to support enterprise transaction processing.

Premera CIO wanted to focus on one vendor.

Careful analysis of the technology, benchmarks and Datacenter program helped ease his concerns. So did the Windows-based client/server claims and membership administration system Premera bought from TriZetto Group Inc. in Newport Beach, Calif.

In July 2001, Premera went live with two ES7000s running Datacenter Server — one 32-way system and one 16-way box in a clustered, fault-tolerant configuration. IT staffers created an eight-way partition on the 32-way box to run SQL Server and used a clustered eight-way partition on the 16-way box as a failover system. That paid off late last year when a memory problem caused the active server to crash. Users noticed only a 20-second slowdown as the second node took over the workload, says Bob Crownhart, an IT director at Premera.

Premera now has 172,000 members loaded into the Datacenter-based system and has been running nonstop since August, when it took down the system to address a hardware problem, says Crownhart.

The company plans to move to 16-way partitions as it scales to more than 1 million members. "Knowing we can scale beyond eight-way partitions is the biggest comfort. That's what we needed to convince ourselves that we could scale to 1.4 million members and beyond," Crownhart says, noting that the target completion date is 2005.

Premera is also looking to shift online analytic processing from its mainframes to Datacenter Server. "The fewer platforms I have to support, the better," Smit says.

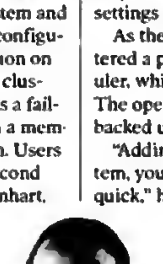
FIRST AMERICAN MAXES OUT

First American Title Insurance was pushing CPU utilization in its eight-way Compaq ProLiant database servers to over 90% when it decided to convert to a 32-way Unisys ES7000 running Windows 2000 Datacenter Server.

At the time, the Santa Ana, Calif.-based insurer was halfway through the rollout of its homegrown First American Software Technology (FAST) Transaction System, a consolidated title and escrow system for 10,000 users in 1,200 offices, says CIO Larry Godec. Tuning the application to make fewer database calls was one way to solve the problem. Porting the database server to Unix was another possibility, but that would have meant an extra six months to rewrite application code in Java, says Godec.

Yet another choice was splitting the database and creating a number of regional databases. However, Godec frowned on that option from a support and maintainability standpoint.

First American was adding hundreds of users each week and didn't want to stop the rollout's momentum, so it turned to a bigger box for its application's SQL Server 2000.


First American CIO kept an application rollout moving.

Godec figured that switching to an ES7000 wouldn't stop the rollout for more than a few weeks. Coordinating the setup with Unisys, Microsoft and EMC Corp., which was supplying a storage-area network, required about six weeks. The conversion itself took 12 to 16 hours.

But the rush through the migration process wasn't without incident. A bad ES7000 CPU caused a business interruption, and incorrect settings caused two more outages, Godec says. He advises users to make sure all processors are burned in appropriately and all settings are triple-checked before going live.

As the system load soared, First American encountered a problem with the Datacenter Server's scheduler, which is part of the operating system's kernel. The operating system froze when the scheduler backed up under extremely heavy load, Godec says.

"Adding that number of users that quickly to a system, you're going to find the stress points pretty quick," he says.

Microsoft tested the application to identify the problem and developed a more efficient scheduler that will ship in April with Windows Server 2003, Godec says. First American plans to upgrade as soon as it can.

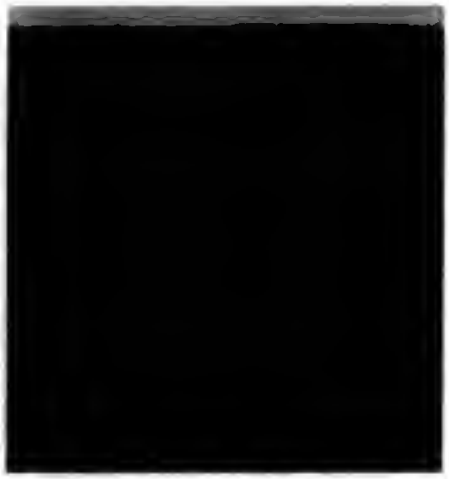
In the meantime, turning off the affinity setting, which can dedicate processors to a specific system, such as the operating system or the database, has helped to offload some of the work from SQL Server and reduce the overall load, Godec says. Reducing the frequency of the database monitoring and replication on the EMC storage system also helped, he adds.

Unlike other companies that partition their ES7000s, First American has all 32 processors managing the workload of the operating system and the database. Godec says he considered 16-way partitions, but uncertainty about the effect on utilization led his team to use all the processors and add a second ES7000 at its Dallas site for redundancy and fault tolerance.

The Unisys box now runs at 40% capacity, so First American has plenty of headroom, Godec says. And he adds that he has been happy with the Datacenter Server technology.

"I would equate the ES7000 to other things that I've known and run in the past, which include the E10000 from Sun, and the Hitachi and IBM mainframes," he says. "It's every bit as reliable."

Godec says he never had a scheduler problem on an IBM mainframe, but he has encountered problems on large systems where the vendor response has been, "You need to upgrade to the new release."



Mary Kay was able to consolidate four production database servers to two, but it soon needed more horsepower and shifted to Windows Datacenter in April 2002. Administrators converted the four eight-way partitions to two 16-CPU, 16GB partitions: one for the production SQL Server and the other for backup.

"Datacenter is basically Advanced Server on steroids," Koeneke says. "It's the same operating system. It just has gates opened up that let you manage large servers."

Consolidating to a single SQL Server instance for e-commerce improved performance and eliminated redundant databases and replication headaches, says Koeneke. Processing capacity went from 1,800 orders per hour to more than 3,000. And Koeneke says problems were scarce and insignificant compared with prior Windows versions.

Mary Kay purchased three more ES7000s last year for a supply chain initiative. One has a 16-CPU instance of SQL Server and two eight-CPU partitions of BizTalk Server. Another has SQL Server running on 12 CPUs, clustered to the 16-CPU SQL Server on the other box, and five four-way partitions for Mary Kay's J.D. Edwards & Co. enterprise resource planning (ERP) system. The third box is for development and testing.

Plans call for the BizTalk and ERP database servers to be consolidated. Koeneke says he also hopes to run a four-way Datacenter cluster with three active 16-way nodes and one passive 16-way node hosting all of the company's databases.

Koeneke says he isn't convinced that total cost of ownership is cheaper with Datacenter Server than it would be with Unix, but given Mary Kay's commitment to Microsoft products, Datacenter made sense. His only gripe is with the Datacenter program, which Microsoft is revamping. Under the existing program, the hardware provider is supposed to be the single point of contact for problems, yet Koeneke says he often waits for answers as vendors point fingers.

Koeneke would also like more choice in the subsystems that attach to his Datacenter Server beyond those in the exact configuration Unisys tested. "They tell us how great everyone gets along and that we have one throat to choke," he says. "But the reality is we get total certification on a solution provided by one OEM. Our flexibility is limited."

PREMERA DOWNSIZES

Premera Blue Cross in Mountlake Terrace, Wash., wanted to replace the homegrown, mainframe-based core systems suite that its 3,000 employees used to administer membership, enrollment and claims. The $3 billion health insurance company, with 1.4 million members in the Pacific Northwest, already used Windows on the desktop; has about 450 Windows servers running e-mail, file-and-print services and various applications; and planned to use Microsoft's development environment.

CIO Alan Smit says he saw an opportunity to focus on a single vendor, even though he shared the general industry skepticism about Microsoft's ability to support enterprise transaction processing.

Careful analysis of the technology, benchmarks and Datacenter program helped ease his concerns. So did the Windows-based client/server claims and membership administration system Premera bought from TriZetto Group Inc. in Newport Beach, Calif.

In July 2001, Premera went live with two ES7000s running Datacenter Server — one 32-way system and one 16-way box in a clustered, fault-tolerant configuration. IT staffers created an eight-way partition on the 32-way box to run SQL Server and used a clustered eight-way partition on the 16-way box as a failover system. That paid off late last year when a memory problem caused the active server to crash. Users noticed only a 20-second slowdown as the second node took over the workload, says Bob Crownhart, an IT director at Premera.

Premera now has 172,000 members loaded into the Datacenter-based system and has been running nonstop since August, when it took down the system to address a hardware problem, says Crownhart.

The company plans to move to 16-way partitions as it scales to more than 1 million members. "Knowing we can scale beyond eight-way partitions is the biggest comfort. That's what we needed to convince ourselves that we could scale to 1.4 million members and beyond," Crownhart says, noting that the target completion date is 2005.

Premera is also looking to shift online analytic processing from its mainframes to Datacenter Server. "The fewer platforms I have to support, the better," Smit says.

FIRST AMERICAN MAXES OUT

First American Title Insurance was pushing CPU utilization in its eight-way Compaq ProLiant database servers to over 90% when it decided to convert to a 32-way Unisys ES7000 running Windows 2000 Datacenter Server.

At the time, the Santa Ana, Calif.-based insurer was halfway through the rollout of its homegrown First American Software Technology (FAST) Transaction System, a consolidated title and escrow system for 10,000 users in 1,200 offices, says CIO Larry Godec. Tuning the application to make fewer database calls was one way to solve the problem. Porting the database server to Unix was another possibility, but that would have meant an extra six months to rewrite application code in Java, says Godec.

Yet another choice was splitting the database and creating a number of regional databases. However, Godec frowned on that option from a support and maintainability standpoint.

First American was adding hundreds of users each week and didn't want to stop the rollout's momentum, so it turned to a bigger box for its application's SQL Server 2000.

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A close look at system logs provides clues to spot hacking or worm activity. **By Dan Verton**

Trace Evidence

YOU CAN DEPLOY all of the firewalls and intrusion-detection devices money can buy to protect your network from hackers and malicious code, but when it comes to truly knowing what's happening on your network, there's no substitute for digging through system log files.

Telltale signs that appear in logs offer strong indications that you may have been hacked, say experts. The following should raise alarms in any IT administrator's head: long entries of random characters, repeated occurrences of "..\", passwords that have been changed by someone using a user ID of "0" and a null log-in, unexpected configuration changes to systems or devices, and a sudden increase or decrease in the number of log messages generated, to name just a few. But even with these known indicators, uncovering hacker activity can be difficult.

"Log analysis is a dirty job," says Chris Kirschke, senior security analyst at Santa Clara, Calif.-based Silicon Valley Bank, where 1,200 users in 27 locations create 25GB of log data every month. "Logs are where you go to find out what has happened," Kirschke says.

System logs can differ slightly from operating system to operating system, but they all follow a general format: date/time stamp, IP address of the system, the name of the process that has created the log entry and the process ID number that is assigned by the system. Knowing the format of a log entry for a legitimate event is critical to being able to identify red flags.

A system log on a Unix machine, for example, may have an entry that appears legitimate at the beginning but contains the remnants of a buffer-overflow exploit at the end, says Chris Romeo, an incident response and investigative expert at London-based Cable & Wireless PLC.

Although Web server logs aren't as useful to intrusion analysis as system logs are, there are entries that can tip you off to hacking activity. One such entry in Web servers running Internet Information Server includes multiple occurrences of "..\ ..\."

Jeff Rovelli, an FBI special agent in New Haven, Conn., says identifying and locating just such an entry was one of the key first steps that led to the arrest of a hacker who had used the vulnerability to gain access to a major e-commerce company's customer database for use in a major scam. Here's an example of this type of suspicious entry, also known as the Web traversal vulnerability: http://host/index.asp?something=..\..\..\..\WINNTsystem32\cmd.exe?/c+DIR+e:\WINNT*.txt.

Looking for Back Doors

Some log entries can also show how a worm may be exploiting a back door left open by another malicious intruder. For example, in September 2001, the Nimda worm's incessant scanning created a surge in log activity that should have been a red flag to many administrators. Nimda scanned for 16 known vulnerabilities, including the Unicode and directory traversal vulnerabilities, a total of 13 times each. That meant that every time a Nimda-infected system tried to infect another system it generated 208 log entries.

But sometimes log entries aren't enough. For example, the Slapper Linux/SSL worm discovered in September 2002 exploited a buffer overflow in Secure Sockets Layer (SSL) Version 2. However, log entries indicating an error only show up when the worm probes an Apache server running the patched version of SSL, says Tina Bird, head of IT systems and services at Stanford University. But when the worm hits a vulnerable system, it leaves no evidence in the Apache logs or in the system logs, she says.

Other forms of malicious code, such as Trojan horses, can be lurking in your systems without showing up in log files, according to Mike Geraghty, vice president of high technology investigations at Newark, N.J.-based Prudential Financial. Geraghty says it's important to look through the win.ini and system.ini files for suspicious executables that are being initiated, as well as through the registry for odd or unusual .exe or .dll files.

"To understand [malicious] behavior, you have to understand what the normal behavior is," says Bird.

Digging for Clues

One expert shows you how it's done

Tina Bird, head of IT systems and services at Stanford University, offered the examples below last month during a live webcast sponsored by the Bethesda, Md.-based SANS Institute.

Example 1

Example 1 shows a log entry from a system that's running Solaris as a remote host attempts to connect to the network through a process called a remote procedure call (RPC).

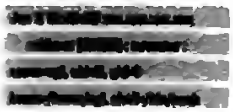
However, "with this data by itself, we really can't tell what's going on," said Bird. But it's in the next entry, shown in Example 2, where things get interesting and start to show signs of a buffer-overflow attempt.

Example 2

Everything following the colon in the first line of the log entry in Example 2 is nothing more than a free-form text message that indicates an error has occurred, said Bird. The random numbers and characters that begin on the third line are actually data that the attacker is using to force the vulnerable application to generate a buffer overflow. "Anytime you look at your log data and you find a large quantity of random characters or nonsense, that's worth investigating," said Bird. "That's a good sign that there's a buffer overflow or an attempt to feed bad data into your system."

The addition of new user names and changes to passwords can also be indicators of malicious activity on Unix systems. For example, Unix systems often assign accounts to legitimate processes, such as "mail" or "Web."

Example 3



In Example 3, the perpetrator of the buffer overflow has created an account named "cgi" using the Unix command "adduser."

Example 4

Then, in Example 4, the hacker changes the password.

What's interesting about the last two entries is that the hacker uses the user name "cgi" in hopes of avoiding detection by posing as a legitimate process. In addition, the user ID (uid) in Example 3 has been set to 0, indicating root-level access to the system. Likewise, the reference in the last line of Example 4 – changed by ((null)/0) – indicates the hacker changed the password for the account without logging into the system, which is another red flag.

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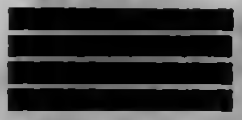

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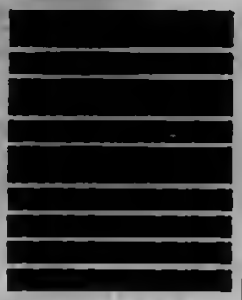

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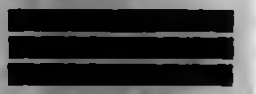

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Making the Connection

The link between users and applications is the focus for Netegrity's CTO. By Tommy Peterson

Q&A *Chief Technology Officer* **Deepak Taneja** *is in charge of technology strategy and initiatives at Waltham, Mass.-based Netegrity Inc., a leader in the burgeoning identity and access management market. He recently spoke with* Computerworld *Technology editor Tommy Peterson about how the Web has changed the notions of identity and access control in corporate computing, as well as the definition of an application. Taneja also described how Netegrity's technical focus is shifting to match those transformations.*

Identity and access-control issues have been around for as long as there has been corporate computing, but this particular market has emerged in the past four or five years. Why now? In the mid-'90s, the Internet caused companies to think about putting intranets and extranets in place. As these extranets were developed, they provided an opportunity for companies like Netegrity to come in with technology that delivered security as a shared service for the entire extranet.

The center of gravity for us and other companies in the space was Web-based applications, which didn't exist 10 years ago. What's happened now is people have gotten control over their extranet, but they've got a mess on their hands inside the enterprise. So they're . . . unifying the infrastructure for the extranet and the enterprise. They're rationalizing the overall problem of how you connect users and principals in general to applications and resources, whether they're Web-based applications or non-Web, whether it's legacy or not, whether it's enterprise applications (or not), portal applications or nonportal applications. The real problem is how you connect users to those applications.

How has your technology focus changed in the five years you've been at Netegrity? The initial focus was access controls and authentication for Web-based applications. The user management side of things has become a whole lot more important. Companies have said to us, "It's great to take a policy-based approach to securing applications for the extranet, but help us manage our user populations. Help us delegate the administration of our user population."

We've been pulled in two directions. Customers say, "Help us deal with the enterprise problems," which is the provisioning issue, which is user management across the enterprise.

We've also been pulled out of the extranet with respect to business-to-business interactions with partners, with respect to business-to-consumer issues and from one Web site to another Web site. The real issue there is, How do you deal with partners and affiliates, and how do you federate your security? So the problem has grown — it's stretched into the enterprise and stretched out to partner sites.

The other key change over the past few years is the shift in distributed computing to a service-oriented architecture. The very definition of an application is now changing. This whole space is based on connecting users with applications, but the application is no longer the application it used to be. It's not this big monolithic thing. It's now Web services, which are these relatively small things that can be reused and integrated.

How do you differentiate your technology from your competitors? How do you say, "This is the way we do it, and it's different from the way somebody else does it"? First, a key design principal for us is whatever we do, we do assuming it's a heterogeneous environment. So we have to support a heterogeneous environment. We're not a Microsoft that can make the assumption that all the applications are going to be Kerberos-based.

Second, the model to us is an end-to-end model. It's not merely about the extranet or about the enterprise or about the partner side. It's end to end, all the way from interactions with partners, interactions between users and extranet applications, interactions between users and enterprise applications.

A third issue is integration. A good way to think about it is, What do administrators deal with in managing this converged infrastructure? We think that giving them two different role models, two different delegated administration models, two different workflow models, two different auditing models is the wrong thing to do. All audit data goes to one place, and there's a single set of reports that people can run. The delegation model is the same whether you're a policy administrator or a user administrator. So provisioning, whether it's extranet user provisioning or enterprise provisioning, is the same workflow model.

Another really important point is the shift to service-oriented architecture. We started thinking about XML messaging and Web services security three and a half or four years ago. Through our partnerships, we are going to broaden our footprint in that area. The last point is scalability. We think in terms of tens of millions of users and hundreds of thousands of applications. We're not really worried about small companies here. This is about the needs of the Fortune 500 and the Global 2000.

The conventional wisdom is that security is one of the biggest barriers to adoption of Web services. How do you specifically get over that barrier? The challenge with Web services is that the standards are not in place yet. We've worked very diligently with other vendors to come up with SAML (Security Assertions Markup Language), and that's going to help us on the Web services side. But overall, there's a lot of potential standards battling for attention, and there's a lot political agendas in the mix. And without having standards in place, people are uncomfortable putting a Web services architecture in place that's based on one implementation or another.

Having said that, I think you can get started with what already has been standardized to some extent. So there's WS Security; there are companies coming up with WS Trust and WS Policy; and Sun has just announced something — they're working with Fujitsu and a bunch of other companies on WS Reliability. All this will take time, but the basics are in place. WSDL, SOAP, UDDI, SAML — you can get started, and I think a lot of people are starting to do that.

Overall, I think it will take a while before the standards come together and large companies feel comfortable committing to Web services. ▶

IDENTITY AND ACCESS

For more of this interview with Netegrity's Deepak Taneja, visit our Web site:

QuickLink 37354
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How has your technology focus changed in the five years you've been at Netegrity? The initial focus was access controls and authentication for Web-based applications. The user management side of things has become a whole lot more important. Companies have said to us, "It's great to take a policy-based approach to securing applications for the extranet, but help us manage our user populations. Help us delegate the administration of our user population."

We've been pulled in two directions. Customers say, "Help us deal with the enterprise problems," which is the provisioning issue, which is user management across the enterprise.

We've also been pulled out of the extranet with respect to business-to-business interactions with partners, with respect to business-to-consumer issues and from one Web site to another Web site. The real issue there is, How do you deal with partners and affiliates, and how do you federate your security? So the problem has grown — it's stretched into the enterprise and stretched out to partner sites.

The other key change over the past few years is the shift in distributed computing to a service-oriented architecture. The very definition of an application is now changing. This whole space is based on connecting users with applications, but the application is no longer the application it used to be. It's not this big monolithic thing. It's now Web services, which are these relatively small things that can be reused and integrated.

How do you differentiate your technology from your competitors? How do you say, "This is the way we do it, and it's different from the way somebody else does it"? First, a key design principal for us is whatever we do, we do assuming it's a heterogeoeous environment. So we have to support a heterogeneous environment. We're oot a Microsoft that can make the assumption that all the applications are going to be Kerberos-based.

Second, the model to us is an end-to-end model. It's not merely about the extranet or about the enterprise or about the partner side. It's end to end, all the way from interactions with partners, interactions between users and extranet applications, interactions between users and enterprise applications.

A third issue is integration. A good way to think about it is, What do administrators deal with in managing this converged infrastructure? We think that giving them two different role models, two different delegated administration models, two different workflow models, two different auditing models is the wrong thing to do. All audit data goes to one place, and there's a single set of reports that people can run. The delegation model is the same whether you're a policy administrator or a user administrator. So provisioning, whether it's extranet user provisioning or enterprise provisioning, is the same workflow model.

Another really important point is the shift to service-oriented architecture. We started thinking about XML messaging and Web services security three and a half or four years ago. Through our partnerships, we are going to broaden our fnotprint in that area. The last point is scalability. We think in terms of tens of millions of users and hundreds of thousands of applications. We're not really worried about small companies here. This is about the needs of the Fortune 500 and the Global 2000.

The conventional wisdom is that security is one of the biggest barriers to adoption of Web services. How do you specifically get over that barrier? The challenge with Web services is that the standards are not in place yet. We've worked very diligently with other vendors to come up with SAML [Security Assertions Markup Language], and that's going to help us on the Web services side. But overall, there's a lot of potential standards battling for attention, and there's a lot political agendas in the mix. And without having standards in place, people are uncomfortable putting a Web services architecture in place that's based oo one implementation or another.

Having said that, I think you can get started with what already has been standardized to some extent. So there's WS Security; there are companies coming up with WS Trust and WS Policy; and Sun has just announced something — they're working with Fujitsu and a bunch of other companies oo WS Reliability. All this will take time, but the basics are in place. WSDL, SOAP, UDDI, SAML — you can get started, and I think a lot of people are starting to do that.

Overall, I think it will take a while before the standards come together and large companies feel comfortable committing to Web services.

IDENTITY AND ACCESS

For more of this interview with Netegrity's Deepak Taneja, visit our Web site:

QuickLink 37354
www.computerworld.com

Serial ATA Takes on SCSI

Outlook: Serial Advanced Technology Attachment storage could replace SCSI for some applications. By Lucas Mearian

Interface Advantage

While the ATA drive uses a 40-pin interface (bottom), Serial ATA devices use a compact, seven-pin edge connector with a ribbon cable that's just 5/16 in. wide (top). These drives should be faster, require less power and allow for more efficient and reliable array designs.

EMERGING TECHNOLOGIES

LOW-COST Advanced Technology Attachment (ATA) disk arrays are already gaining ground in near-line storage and disk-to-disk backup applications, but a faster class of drive arrays that uses the new Serial ATA interface standard is likely to challenge SCSI for high-performance applications as well.

The Serial ATA standard, approved in November by the Institute of Electrical and Electronics Engineers Inc. (IEEE), has several advantages over the parallel, shared-bus master/slave architecture of ATA.

Serial ATA works at lower voltages, and because it uses just four data lines compared with ATA's 32, it's 50% faster. It also supports hot-swappable drives and advanced features such as native command queuing, which lets a disk drive make multiple requests for data from the processor and rearrange the order of the data to maximize throughput — a feature traditionally available only on SCSI and Fibre Channel drives. Finally, Serial ATA can support up to 128 devices per channel (vs. two for ATA and 15 for SCSI) and extends the maximum supported cable length from 18 inches to 1 meter.

Serial ATA's biggest potential benefit lies in its price/performance. Analyst company IDC estimates that about 87% of all drives today use ATA. Economies of scale have made ATA disk arrays, at 1 to 2 cents per megabyte, much cheaper than SCSI, at 3 to 5 cents per megabyte. Serial ATA disk arrays should benefit from those same economies and could displace SCSI in small servers and even large storage arrays using the emerging iSCSI storage networking protocol.

"Five to 10 years from now, Serial ATA with iSCSI will be the dominant storage model," predicts IDC analyst Robert Grey.

Serial ATA's first incarnation, available in drives and controllers, won't do much for end users. That's because ATA disk speeds, at a maximum sustained throughput rate of about 75MB/sec., can't use the bandwidth increase that Serial ATA offers. And initial pricing will be about 10% higher than for ATA drives, says Jason Ziller, chairman of the IEEE's Serial ATA Working Group.

But manufacturers will benefit. Serial ATA's seven-pin connector cable, which is 5/16 in. wide, replaces ATA's 40-pin ribbon cable, which is 2 in. wide, restricts airflow and increases heat in an enclosure.

In addition, chips are now smaller, and their voltage needs are lower than ATA's 5-volt requirement. Serial ATA requires just 0.5 volt.

Vendors plan to offer Serial ATA disk arrays that deliver real performance gains. Enhanced specifications are on the way. Serial ATA II, due by mid-2004, is expected to double transfer rates, and a third-generation standard could double them again by 2007 (see chart).

Best Applications

In the data center, Serial ATA is likely to boost emerging ATA disk-based storage applications such as near-line storage and virtual tape servers, since the faster bus speed works well for streaming data and large file transfers.

As the technology evolves, some analysts say ATA disks could be used in high-end primary storage devices, such as EMC Corp.'s Symmetrix and Hitachi Ltd.'s Lightning arrays.

For the time being, though, SCSI and Fibre Channel disks have the advantage for storing data associated with high-performance, online transaction-processing applications because SCSI's higher spindle speeds, at up to 15,000 rpm, enable faster access to smaller files. And the mean time between failures of ATA drives, at 500,000 to 600,000 hours, still doesn't stack up to SCSI's 1.2 million hours.

That doesn't worry Jamie Riis, CIO at BayView Financial Trading Group LP in Miami. The mortgage banking firm uses Network Appliance Inc.'s ATA-based NearStore R100 near-line storage array for disk-to-disk backup of its e-mail, SQL and Oracle databases.

PRODUCTS

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HERE COMES SERIAL SCSI

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Revenue Optimization Software

DEFINITION

Revenue optimization software automates the process of calculating the prices businesses need to charge to maximize profits. It can adjust prices using an algorithm that factors in variables such as demand forecasts and inventory.

BY MARC L. SONGINI

JUST ABOUT ALL any business is looking for is a way to maintain precisely the right amount of product inventory or resources to supply a service and to know the highest possible price the market for its products or services will bear. That would mean no overstocks, no disappointed customers and no write-offs to explain to investors. And the price would always be right to maximize profits.

Until someone comes up with a working crystal ball, revenue optimization software may offer the best hope to companies looking to achieve those goals.

This business intelligence software factors variables such as demand, the cost of a good or service, and the amount of revenue the company needs to be profitable. It then calculates the best sales price for a good or service. When key parameters change, the software is designed to revise prices almost instantly.

For example, if a travel company selling space on a cruise ship knows from historical trends that February is a bad month for a particular trip, it can drop the price to a level most likely to close the deal with a given customer.

At the same time, the company's price planners, using a revenue optimization system, can draw data from applications that handle sales and marketing operations, as well as from data repositories containing customer-related information, in order to make their calculations.

QUICK STUDY

The planners can also factor in other variables, such as the cost of the trip at this particular time of the year based on fuel prices or the weather. They can even launch marketing campaigns targeted at the audience most likely to respond to an offer.

"Revenue optimization takes a finite good, factors in demand and comes out with a price," explains Donald Davidoff, vice president of pricing and revenue management at Archstone-Smith, an Englewood, Colo.-based national apartment owner-operator.

Archstone-Smith uses an application from Manugistics Inc. in Rockville, Md., that forecasts the demand and supply for its space to create the best pricing across a variety of leasing scenarios.

The software, called Lease Revenue Optimizer, comes up with a number by factoring in what the competition is doing and Archstone's own corporate goals for profitability. The software also has rules that dictate how to respond to changes in competitors' pricing, Davidoff says.

The analytical capabilities in revenue management software can automatically identify and segment a company's most profitable customers, explains Steven Pinchuck, corporate director of revenue management at Harrah's Entertainment Inc. in Memphis. The company, which operates hotels and gaming establishments, also uses revenue management software from Manugistics (see diagram).

Built-in Business Rules

There can be considerable complexity built into the business rules embedded in the software. For instance, a company in a retail environment may tweak the price differently for a special promotion, using variables such as budget constraints and sales goals, says Ben Vinod, vice president of solution development at i2 Technologies Inc. in Dallas.

On the other hand, if for instance the product isn't selling, there may be an end-of-life price optimization, which factors in how much of a markdown will be available and how much stock is still in place.

Once the software is up and running, configurations can be altered on the fly, depending on whatever priorities make the most sense, says Vinod. The applications can factor in key performance indicators for a particular industry.

The software can also be programmed to recognize a particular sales region or a certain line of products that are underperforming and calculate the best pricing scheme to effect a turnaround.

Profit may not even be the key factor — a company may be more interested in increasing its market presence and may be willing to mark down a product accordingly, he says.

The software's capabilities are still in their infancy outside of the supply chain planning applications field, says Gartner Inc. analyst Karen Peterson.

The retail industry has shown the biggest demand for the applications thus far, because companies have to figure out the best way to price products and move them off shelves. The software has yet to be deployed with much success in other industries where there is some interest in revenue optimization, such as high tech.

Revenue optimization software requires clean legacy data, says Davidoff. The legacy data often isn't formatted to be recognizable by the software, so users must build a data integration layer that can find and correct errors.

And users can't typically just install and use revenue optimization software out of the box, says Peterson. Rather, they can get a competitive advantage with it only by understanding the specifics of their industry and their corporate strategy and then modeling the software accordingly.

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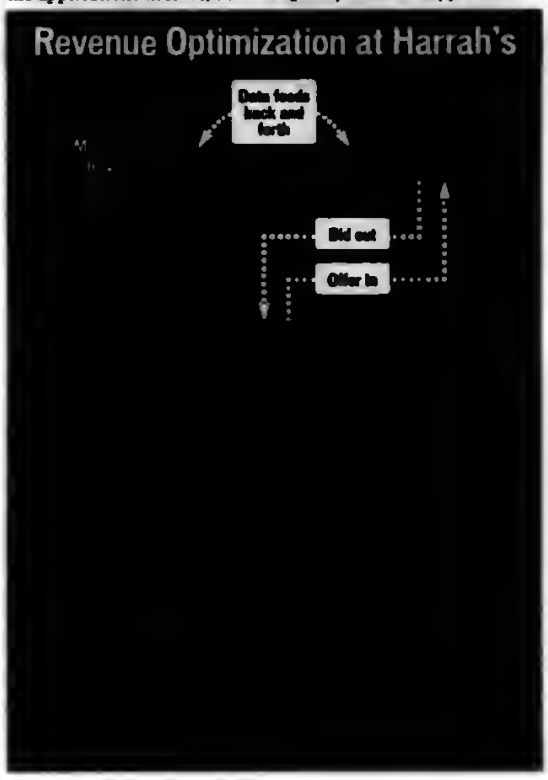

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PRODUCTS

First Drives Ready to Ship

Serial ATA vendors are beginning to ship disk drives in small numbers, but bulk shipments are expected by mid-2004. Current and planned offerings include:

SERIAL ATA DISK DRIVES

Western Digital Corp.
Lake Forest, Calif.
- The 360B WD Raptor, a 10,000-rpm Serial ATA device.

Seagate Technology LLC
Scotts Valley, Calif.
- Barracuda V series drives include dual ATA/Serial ATA connections.

Maxtor Corp.
Milpitas, Calif.
- DiamondMax Plus 9 Performance device and the 7,200-rpm 250GB MaXLine Plus II.

Fujitsu Computer Products of America Inc., San Jose
- Shipping 2.5-in. Serial ATA hard disk drives in the fourth quarter of this year.

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QuickLink 36976

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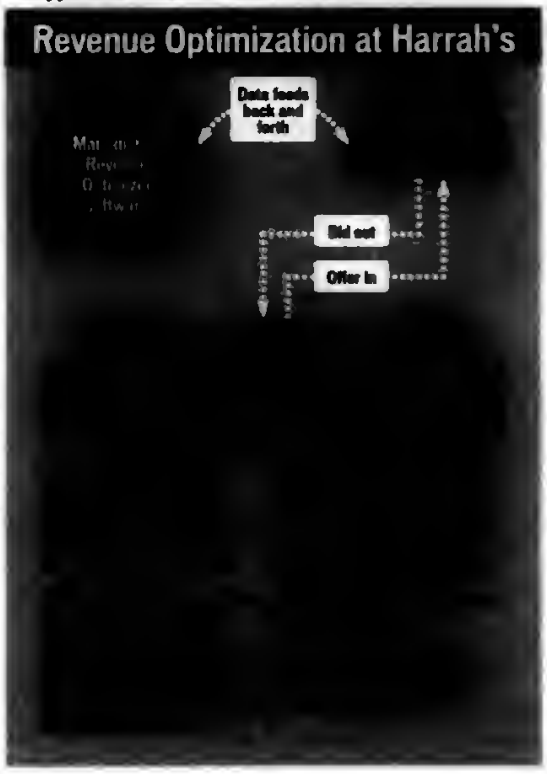

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GO Online For Latest Prices and Weekly Promotions

Porn Policy Collars a Million-Dollar Customer

The HR department bends some rules when offensive content comes in from the company's largest client. By Vince Tuesday

A BRIEF ALTERCATION this week with a staff salesperson gave me a new perspective on how pornographic e-mail can affect our business.

Like most companies with Internet access, we've had our share of employees who download inappropriate material. To eliminate the excuse that the porn came unsolicited, our most recent policy is quite strict: Anyone who doesn't report even inadvertent access to inappropriate material will be held accountable.

Because of this policy, the security staff has to field calls and e-mails about every offensive message. Still, I'm happy to accept those messages if it means that nobody can get away with downloading pornography by claiming that it was a mistake. But then we heard from Malcolm in sales, who reported receiving an inappropriate e-mail.

SECURITY MANAGER'S JOURNAL

Comedy of Errors

I arrived at Malcolm's office with a set of floppy disks, ready to take a copy of the e-mail and its contents for investigation. This was the first time I'd done an investigation with the sales team, and I wanted to make a good impression, since we want them to stress to our customers how secure our company is.

My plan was simple: Copy the e-mail and message headers, delete the original to stop the content from spreading further and investigate the source. Case closed.

But it didn't exactly go well. My company gives Compaq iPaq desktops to most employees. The units are quiet, have a small footprint and work well, but they don't have a great deal of expandability and aren't designed to be upgraded or modified.

The next problem was that Malcolm's machine didn't have a floppy drive. I left him twiddling his thumbs and returned 10 minutes later with a removable drive. Then I discovered that iPaqs come with a locked assembly to stop users from removing the blank plate in order to insert a floppy drive. So I left again. Another 10 minutes later, I returned, this time with a key and the drive. At this point, I was slightly flushed and a little embarrassed.

I installed the drive without a problem and was getting ready to copy the e-mail when Malcolm asked what I was doing. When I started to explain the plan, he suddenly panicked. "Whoa," he screamed, as he tried to grab the floppy disk out of my hand.

> **It was adult content that was unlikely to be illegal but was certainly in breach of our policy – and no doubt in breach of our customer's policy.**

Apparently the pornographic e-mail he received came from the key contact at our largest customer. Malcolm was terrified that any kind of formal complaint would alienate his contact. Our company might then lose the account, and there would be hell to pay.

I gave him our normal platitudes that the course of action is up to the human resources and legal departments and that we just carry out the investigations. However, I also knew that those departments tend to follow my team's advice because of our experience in these matters.

I returned to our lab and reviewed the material. It was adult content that was unlikely to be illegal but was certainly in breach of our policy — and no doubt in breach of our customer's policy.

Moral Dilemma

Did I want to stand firm and help stamp out this kind of behavior, even if my company might lose its largest customer and millions of dollars in revenue? Or should I recommend that our company just ask Malcolm to drop a polite note to his contact saying he'd rather not receive anything like that and let the matter drop?

I must confess that I took the easy route and recommended to human resources that we let the matter drop as long as Malcolm told the sender informally that he should stop sending such stuff — and that we would be forced to take a formal approach next time.

It would be much better if we could find a way to stop this kind of content from getting into our company in the first place. I've always been a little wary of content inspection products, particularly those that look for embedded images, because in my experience, they just don't work. Still, if we could catch even half the porn being sent in, we could block or warn off the top senders.

False Alarms

The reason these products don't work isn't because they can't identify pornographic images but because they tend to have a high false-alarm rate. Pictures of babies, the Mona Lisa and just random landscapes and business logos can be misidentified as pornography.

I did find one company making bold claims in this area. I didn't believe them, but it was willing to provide an evaluation copy of its software. The company did, however, warn me about the one area that the software has problems with: Pictures of elephants are known to cause false alarms. Apparently, the combination of two large round ears and a long trunk raises the red flag.

With this tool, we should be able to successfully block offensive content — so long as that customer doesn't send Malcolm any photos of safari trips. I'll report back on how well the product works in a future column. In the meantime, if you know of any good ways to protect staff from e-mail with offensive content, drop me a line with your suggestions. ◗

WHAT DO YOU THINK?

This week's journal is written by a real security manager. "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

Cisco Updates Firewalls

Cisco Systems Inc. has introduced software upgrades that boost the speed of and allow more concurrent users on some of its low-end PIX firewall appliances. The upgrades increase the performance of the PIX 501 and 506E models and add support for the Advanced Encryption Standard.

Cisco also announced two new midrange models, the PIX 515E and 535. The 515E-UR costs $7,500, and a pair of devices that hook up each other costs $10,000. A single 535-2GE costs $14,000, and a redundant pair costs $30,000.

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BRIEFS

URoam Upgrades SSL VPN Appliance

URoam Corp. in Sunnyvale, Calif., announced last week that it's shipping a revision of its Secure Sockets Layer (SSL) virtual private network (VPN) appliance, the FirePass 1000/4000 server. Version 3.5 offers greater security and control for IT managers, according to uRoam. It also offers policy-based access for users, giving them e-mail and file access from cell phones, as well as e-mail, intranet and file access from kiosks. No preinstalled client software is required. Pricing starts at $11,000 for a license serving 100 concurrent users.

Vendor Announces PlanView v7.3

PlanView Inc. has announced Version 7.3 of its PlanView Portfolio Management program. The Austin, Texas-based IT portfolio, resource and project management tool vendor said the new version includes tools to rank potential IT investments. PlanView 7.3 also includes portals for viewing IT investments, tracking IT asset performance and managing IT project resources. Other features include a Web-based time and expense module and full-text search capability. Pricing for Version 7.3, which ships in June, starts at $50,000.

E.piphany Ships Two CRM Products

San Mateo, Calif.-based customer relationship management (CRM) software maker E.piphany Inc. last week announced that it is shipping two new products to help companies in the telecommunications and finance markets increase sales volume. Interaction Advisor for Telecommunications and Interaction Advisor for Retail Finance take historical data to help upsell and cross-sell to customers who contact a company by phone or e-mail, according to E.piphany. Pricing starts at $100,000.

ROBERT L. MITCHELL

Scope Creep and Exchange Server 2003

WHEN I WAS IN SCHOOL, I was always working on my car. I had it figured that I'd save a bundle by modifying it myself. But inevitably, I'd would fail to estimate the scope of the project, and I'd spend ridiculous amounts of time throwing good money after bad. That upgrade to a four-barrel carburetor didn't fit unless I changed out a few hoses and feed lines. Then I needed a bigger fuel pump to keep the supply lines humming. In the end, I decided that the carburetor wasn't going to work as advertised unless I had the right motor underneath it. Upgrading IT infrastructure is a lot like that, especially when it comes to Microsoft's products.

Exchange Server 2003, the upcoming release of Microsoft's e-mail server software, is a classic example. Microsoft does a very good job of integrating its products and creating interdependent feature sets that it hopes will push IT into lock-step upgrades of its desktop, server and application software. And to exploit the most compelling features of Exchange 2003, you'll need to do exactly that.

E-mail administrators who already got their fingernails dirty migrating from Exchange 5.5 to 2000 can identify with these sentiments. Exchange 2000 was the first version to use Windows 2000 Server's Active Directory as its repository for user information. The requirement that has led many companies into major server infrastructure upgrades. But Exchange 2000 also delivered real benefits to administrators, enabling faster backbone communications, more granular administrative controls for delegating tasks, improved reliability and server consolidation through support for four-way servers, active-active clustering and multiple message databases per server.

If Exchange 2000 was about the back end, Exchange 2003 is very much user-focused. New features include greatly improved performance between Outlook and Exchange over slow links, support for SSL session encryption and changes to the Outlook Web Access user interface to make it look like the standard Outlook 2003 client. Exchange 2003 also supports snapshot-backup technology that could reverse the trend toward creating multiple, smaller message databases in order to meet backup and restore-time commitments.

Exchange 5.5 users considering a migration to Exchange 2003 face all the same challenges Exchange 2000 users faced, and then some. But for those already on Exchange 2000, going to Exchange 2003 might look like a Sunday drive. It requires upgrading to Windows Server 2003, but the Exchange server upgrade shouldn't require the major revamping of hardware and server configurations that 2000 did.

But what about those performance improvements over slow links? Users at remote sites will benefit. And heck, you might even be able to consolidate by removing servers no longer needed at remote sites. But you won't see these benefits from Exchange 2003 unless you also upgrade to Outlook 2003, which ships with Office 2003 later this year. The latter won't work with anything older than Windows 2000 with Service Pack 3. And you'll probably need at least 245MB of disk space and 256MB of RAM per machine. Are you ready to go down that road?

Then there's Windows Server 2003. You could just slide it under your Exchange 2003 servers and be done with it. But unless you upgrade the entire Active Directory infrastructure, you probably won't be able to use enhancements such as the ability to support more than 5,000 users in a group or to rebuild branch office servers from a CD instead of resynchronizing them over the network.

Add to that the fact that we're talking about new technology here. Windows Server 2003 won't ship until April 24. And Office 2003 and Exchange Server 2003 aren't expected to ship until midyear at the earliest. Even if Microsoft releases these products on schedule (and how often does that happen?), you could be looking at mid-2004 or later for service pack updates.

All this is not to say that Exchange 2003 doesn't have many features to recommend it. But for the 20% or so of Exchange users that Gartner says have already migrated to Exchange 2000, there's no reason to rush to 2003 unless a new feature is critical — and worth the risk and expense of related upgrades. The 10% who haven't started migrating yet probably should go with Exchange 2000 now rather than wait for Exchange 2003 to shake itself out, since support for NT 4, which underlies Exchange 5.5, expires Dec. 31. For everyone else already working through Exchange 2000 migrations, slapping a new engine in the IT chassis probably doesn't make a lot of sense right now. That is, unless you're the type who enjoys working on cars.

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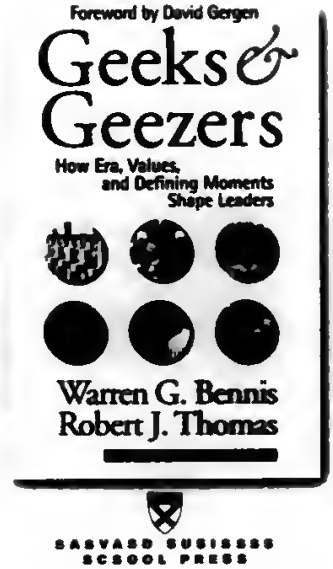
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Snake Pit or Gold Mine?
Times are tough, and most IT execs love a challenge, but not every CIO job is worth accepting. IT professionals like Atefeh Riazi (left) offer tips oo how to analyze a job offer. **Page 48**

Premium Protection
A small but growing oumber of organizations are taking steps to buy insurance as protection against cyber-attacks and data theft. **Page 50**

Sealing the Deal and Collecting Their Due
Sales forces are gaining access to tracking and reporting data through information-sharing software, which helps ensure that they collect accurate commissions. **Page 52**

Cold Calls

FEELING THE HEAT

Automating the process of telemarketing compliance can keep the phones ringing. By Mary Brandel

IN THE PAST 18 MONTHS, the U.S. retail motto has gone from "buyer beware" to "seller beware" wheo it comes to marketing goods and services over the phooe. Thanks to a flood of state-based do-not-call laws, companies in industries ranging from insurance, hospitality and travel to real estate, finance and telemarketing need to pay attentioo to whose number they're dialing — or face first-time offender fines ranging from $100 in Wisconsin to $25,000 in Indiana.

That's the price they stand to pay for calling consumers who are registered oo any of the do-oot-call lists that more than half of the states now maintain. States are becoming more aggressive about encouraging people to report violators, and they're collecting fines from the offenders and publicizing their names. And fearing that negative publicity could cut into the hundreds of billions in revenue they make from telephone solicitations, companies are scrambling to perfect their databases and dialing systems.

Do-not-call laws areo't new. Florida enacted the first such law in 1990. Since then, companies have been purchasing lists, which can cost up to $800 annually, and IT departments have been merging their companies' lead databases with these lists, purging numbers that shouldn't be called.

Database administrators also have to integrate their companies' internal do-oot-call lists, which are required by the Federal Trade Commission, with their customer lists, which could be in several separate databases across the company. In one exemption from do-oot-call laws, companies can call their own customers, even if those customers are on a state do-not-call list.

Unfortunately, the way most companies find out that their in-house list-scrubbing is imperfect is by committing a violation. In the past couple of years, even large companies like Chase Manhattan Bank, Wells Fargo Bank, Discover Financial Services and Marriott Ownership Resorts Inc. have faced fines. As a result, companies are turning to outside service providers for list-scrubbing services, and they're implementing systems that automatically block noncompliant calls.

Future Call

"There might be a few companies out there that think they can handle this in-house, but I don't think it's possible, unless they have a staff dedicated day-in and day-out to doing the research, pulling down the information, verifying it, scrubbing their internal lists and

ASP BASED LIST SCRUBBING	NETWORK-BASED SYSTEM (GRYPHON)	CARRIER-BASED SYSTEM (TELEBLOCK)
Strengths: ■ The turnaround time is fast. ■ It's inexpensive. ■ IT departments can retain some control over the process.	**Strengths:** ■ Do-not-call lists are updated in real time, leaving no room for error. ■ Blocks calls placed during restricted hours. ■ Consumers who ask to be on do-not-call list are immediately blocked across the enterprise.	**Strengths:** ■ Agents can dial as if they're making a normal phone call. ■ Do-not-call lists are updated in real time, leaving no room for error.
Weaknesses: ■ The resulting list is only as good as the ASP that does the scrubbing. ■ It's still a somewhat manual process, leaving room for error.	**Weaknesses:** ■ Agents need to dial an access code before making a phone call. ■ The cost is calculated on a per-call basis, so the service can get expensive.	**Weaknesses:** ■ Currently, customers have to sign up with a relatively unknown long-distance carrier. ■ It's still unclear how long-distance providers are going to charge for the service in the future. ■ Doesn't block calls during curfew times.

checking it again," says B.J. Neider, manager of data transmissions and response modeling in the IT department at FutureCall LLC, a telemarketing outsourcer in Colorado Springs.

Neider says achieving perfect compliance required "too much time and money to tackle with the resources we had." He estimates that it took four IT employees 10 hours each per week to subscribe to the new state lists as they came out, keep up with which states had new laws and bring the lists in-house, convert them to a workable format and scrub them against all the contact databases maintained in the call center. Even with all that due diligence, FutureCall was once fined $75,000 in New York.

Neider signed on 14 months ago with PossibleNow.com Inc., an application service provider in Duluth, Ga., that offers DNCSolution, a Web-based list-scrubbing application that sends an e-mail when any state list has been updated. Upon receipt of the e-mail, a FutureCall employee pulls the contact database from the automated dialers in the call centers and sends them to PossibleNow, which returns the database with flags next to numbers that must be suppressed. The employee then sends the updated databases back to the call centers, all within a matter of hours.

For example, Neider says, "If Indiana's [do-not-call list] was just updated and goes into effect tonight, we can log on, go to our client folder, have the system scrub the leads, get a return file and have it in place the next morning before dialing begins," Neider says. Speed is important, he says: "Every hour I spend not dialing is revenue lost."

FutureCall still needs to subscribe and pay for the state lists, but it no longer has to be proactive about the updates. With this service, Neider figures he can scrub 18 million records per month at a cost of $36,000 annually. "If I have two violations in Indiana, there's my $35,000 right there," he says. "The money we paid out for fines exceeded our yearly cost with PossibleNow."

Bankers Life

Other companies find that even that process is too manual. One is Bankers Life and Casualty Co., which uses phone marketing to sell some of its insurance products.

"There are do-not-call lists from 30-plus states at this point, and they all come in different formats, with different npdate frequencies, some via the Internet, some on floppies. So first you have to aggregate all the lists and then deploy them somehow [to your various locations], whether manually or via a centralized database. That allows people to query it before making a call," says Michael Snavely, a marketing executive at Chicago-based Bankers Life. "It's an incredible investment of money."

Bankers Life chose a service from Norwood, Mass.-based Gryphoo Networks Corp., which claims to block noncompliant calls in two ways: One is via a network-based service, for whicb companies pay a per-call fee. The second is with a system the marketer implements itself and hooks into its automated dialers. The latter system is often used by large telemarketing outsourcing companies.

Bankers Life uses Gryphon's network-based system. Any call originated by a Bankers Life agent gets routed by a local or long-distance carrier through a Gryphon database that contains relevant state do-not-call lists, updated in real time, as well as Bankers Life's internal do-not-call list. If the number matches one in the database, the sales agent hears a message saying it's a restricted number and the call never goes through. A call will also be blocked if the agent is calling at a time that's off-limits in the state being called — say, before 9 a.m. in Connecticut.

Furthermore, if consumers ask to be added to Bankers Life's internal list or say they are on a state do-not-call list, the agent can simply press the pound key to record the name and number in a Gryphon database, blocking access to it in every Bankers Life branch.

"You don't have to buy any equipment of any kind," says Keith Fotta, president of Gryphon. "You access the service via a network access number and put in your code, which locks you in for the whole session."

Snavely estimates that he spends about $100,000 a year to buy the state lists, and about the same for Gryphon's annual subscription fee, which is based on the number of calls the company makes or the number of sales agents making calls. Without the system, he figures, he would easily pay $100,000 per year in fines. "And if you're a multiple offender, the state can theoretically eliminate your ability to conduct telemarketing in that state," he says.

A Matter of Survival

The bottom line is that compliance with do-not-call laws is becoming a matter of survival for companies that reap big revenues through phone-based solicitations. Automating the compliance process may take some control out of IT's hands, but technology managers can play a buge role in helping their legal and marketing departments understand the various technology choices.

IT will also need to remain involved at the implementation level, particularly at companies where customer lists and contact databases are scattered in different formats and on different systems.

"Based on the list of violators I see on a regular basis [as they are published by the states], I get a strong sense that our competitors and peers within insurance and in different industries are doing a lousy job of this and are getting hit again and again and again," Snavely says. Reputations are at stake, not just those of telemarketers but of anyone who engages in pbone-based marketing. ◗

Brandel is a freelance writer in Newton, Mass. You can contact her at brandels@attbi.com.

CARRIERS OFFERING SERVICES

Another network-based option is TeleBlock from Call Compliance Inc. in Glen Cove, N.Y. TeleBlock automatically screens and blocks calls to people on state, in-house and third-party do-not-call lists within the network of s participating telephone company.

A company in need of telemarketing services signs up for TeleBlock through its long-distance carrier, where the system is installed.

One drawback is that Teleblock is offered by only three small long-distance carriers – eMeritus Communications Inc., Covista Communications Inc. and Illuminet, now owned by VeriSign Inc. But through an agreement that VeriSign and Call Compliance reached last year, TeleBlock is now available to all telecommunications carriers nationally.

Robert Brous, president of HD Brous & Co., a Wall Street investment firm with 200 employees, says it "wasn't realistic" for the company to require brokers to constantly check against state do-not-call lists before making s call. He contracted with eMeritus for long-distance service when TeleBlock first became available three and a half years ago. "It basically took any questions away of compliance headaches," Brous says.

Brous says he also looked into building his own database and attaching it to the phone system, but that wouldn't have worked with his company's multiple locations. List-scrubbing doesn't address the problem because it doesn't work in real time, he says, "plus, you're relying on how well the company does the scrubbing."

– *Mary Brandel*

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Snake Pit or Gold Mine?

Here are 10 ways to analyze a CIO job offer. By Alan S. Horowitz

THE MARKET FOR CIOs isn't what it used to be. "Times are poor, and the market is kind of soft," notes Rick Schoenhals, senior director for IT for the National Football League's Denver Broncos. The temptation is great to jump at any decent-sounding offer. Stop. Not every job offer thrown your way should be caught. How can a CIO know which offers are worth serious consideration and which should be given a pass? Here are 10 points to consider when analyzing an offer:

1 Is the organization financially sound? Unless you're a turnaround specialist, beware of a troubled company. It will likely promise more than it can deliver.

"The biggest red flag is the financial condition of the company," advises M. Victor Janulaitis, CEO of Janco Associates Inc., an IT consulting firm in Park City, Utah.

2 Starting compensation matters. Beware if the financial package offered is filled with promises for the future. "I'd really look for them to want me as much as I want to work for them. They need to step up with an offer that shows an interest in you," recommends Schoenhals.

3 Pay attention to the personal chemistry, especially between you and the person to whom you'll report. "Can you work with each other: do you have common goals and a common point of view?" asks Atefeh Riazi, CIO and senior partner at New York advertising agency Ogilvy & Mather Worldwide. No hard and fast rules exist for gauging personal chemistry. Trust your intuition, says Riazi, who adds, "The brain decides if the money is right, but then there is more — and that more is your gut."

4 How important is IT to the company's top management? If you'll be reporting to the CEO, IT is probably viewed as important. What's the chief financial officer's attitude toward IT? Ask the CFO for his vision for IT within the company. If the answer is long and detailed, that's good; if it's short or vague, watch out. Look at the organization's metrics to get an understanding of how IT is viewed and measured. Jo Haraf, CIO at San Francisco-based law firm Morrison & Foerster LLP, says that in law firms, a good ratio of IT staff to overall staff is 1-to-20 or 1-25. If the firm you're considering has a 1-10 or 1-50 ratio, it would indicate a very strong or very weak commitment to IT.

5 How will your performance be measured? Ask the person who will be your boss, "How will you know if I'm doing a good job or not?" You want to know the criteria by which you'll be judged, says Gerry McCartney, CIO at University of Pennsylvania's Wharton School in Philadelphia. You want a prospective boss who can articulate these standards in some detail. "You don't want the job if they can't tell if you're successful or not," says McCartney.

6 Know the state of drivers behind your potential success. Tim Buckley, CIO at mutual-fund company The Vanguard Group Inc. in Malvern, Pa., says for a CIO to be successful, he needs drivers such as good people to work with, a business side that views IT as a partner and a company committed to professional development for IT staff.

Understand management and its expectations. Katherine Spencer Lee, executive director at IT placement firm RHI Consulting Inc. in Menlo Park, Calif., says you should ask yourself the following questions: How experienced is the management team you're going to be a part of? Does it have a history of stability? What are the goals of that management team, and are they smart goals? Have the goals been quantified, and are they realistic? And, of course, could you realistically deliver what they're looking for?

CIO and senior partner at Ogilvy & Mather Worldwide says, "The brain decides if the money is right, but then there is more – and that more is your gut."

Can you answer all of these questions positively regarding the company you're considering? If not, you may never be successful, no matter how good you are.

7 How does the job situation fit your interests? "Can you have passion for the industry and the company?" asks Buckley. "If you don't groove on the company, you'll never click."

Lee makes the point that you should wake up each day wanting to go to work. If the company seems unlikely to generate that kind of passion in you, look elsewhere.

8 Does the full scope of your responsibilities sound interesting? This refers to not only the responsibilities of IT, but also to the scope of the problems the company faces, what you will be asked to do and how IT and the business side work together, says Lars Rabbe, former CIO at Redback Networks Inc. and now an executive in residence at Clearstone Venture Partners in Menlo Park.

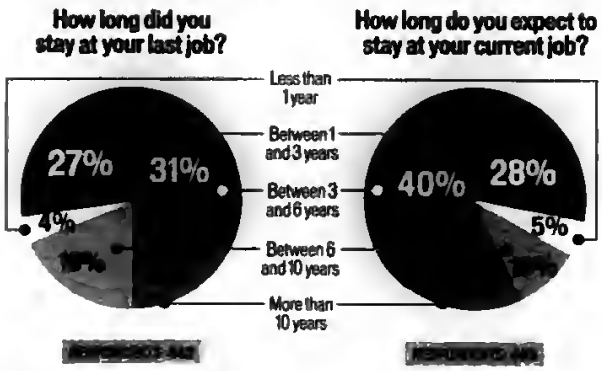
9 Be wary if a company in a major metropolitan area is willing to relocate you. "Why are they spending a lot of money to relocate you? Why didn't locals take the position?" asks Janulaitis.

10 Realistically consider the demands of the job. Do you want to live your job or live your life? If the company's IT department is troubled, you may have to put in more time on the job than you want. "People are looking for a job that allows them to have a life," says Riazi of Ogilvy & Mather.

Horowitz is a freelance business and technology writer in Salt Lake City. Contact him at alan@ahorowitz.com.

Should I Stay or Should I Go?

CIOs and the heads of IT have held their titles for an average of four years and eight months, according to a 2002 *CIO* magazine study titled "The State of the CIO." Here's a closer look at their tenure:



SOURCE: CIO MAGAZINE, MARCH 2003

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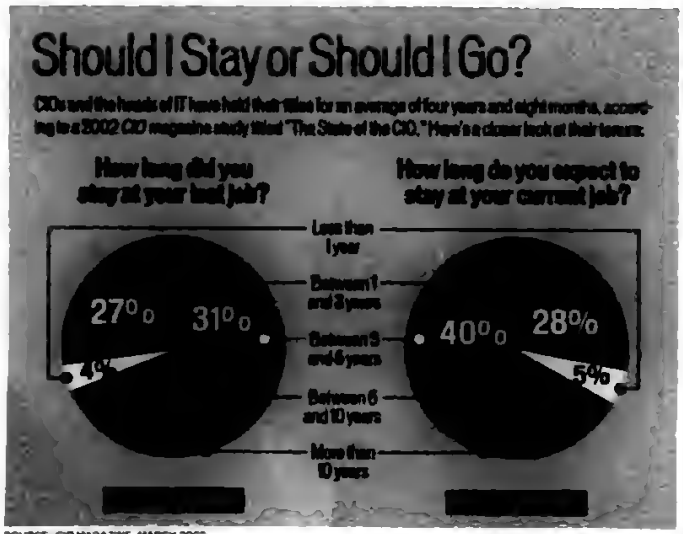
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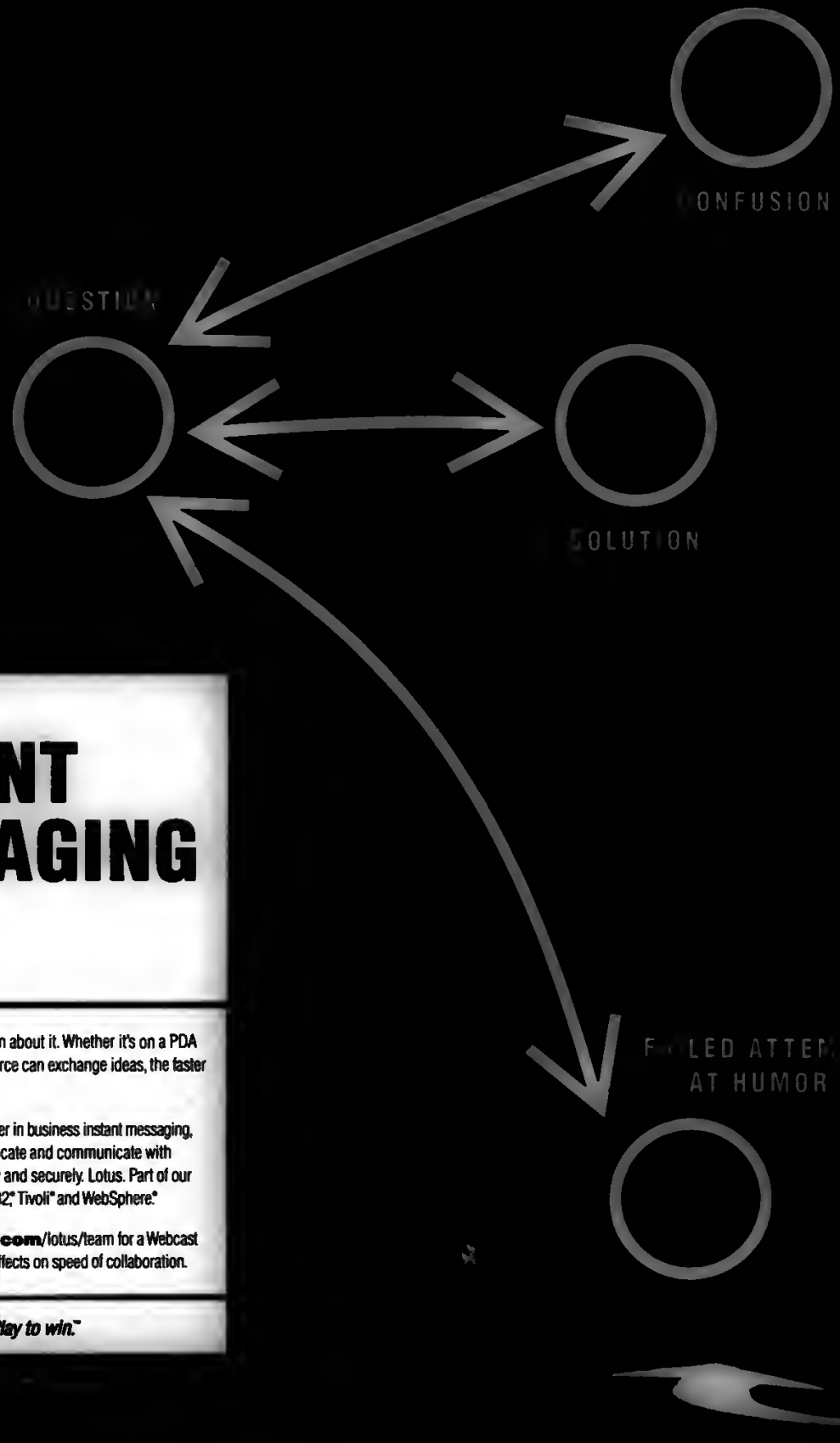
How long do you expect to stay at your current job?
Less than 1 year
Between 1 and 3 years
Between 3 and 6 years
Between 6 and 10 years
More than 10 years
27%
31%
4%
40%
28%
5%

SOURCE: CIO MAGAZINE, MARCH 2002

IBM.



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PREMIUM PROTECTION

Security breaches. Viruses. Should you amend your IT insurance plan to cover such risks? By Thomas Hoffman

A SMALL BUT GROWING number of companies are looking to buy insurance that would provide financial relief in the event of a data security breach caused by cyberattack or digital terrorism.

Let's say a hacker broke into your company's networks and accessed reams of sensitive customer account data. Would your company be covered under its general liability insurance? Probably not.

Three or four years ago, there were a lot more gray areas as to whether information security was covered under general corporate liability policies, says Emily Freeman, a security consultant at AIG eBusiness Risk Solutions in San Francisco, an American International Group Inc. (AIG) division.

Computer and data security "wasn't affirmatively covered, but it wasn't excluded either. But now, the drift is for exclusion," says Freeman. As a result, financial services companies, retailers, hotels, travel-related businesses and technology companies are showing strong interest in data security insurance.

Commercial insurers such as AIG, Zurich North America Insurance Co. and The Chubb Corp. are responding with customized cybersecurity policies based on individual companies' exposure to risk.

Better Policies

Initial security policies that were available a few years ago "had high fees, and they weren't selling well," says Scott Charney, chief security strategist at Microsoft Corp. But over the past few years, he says, insurers "have become more savvy in crafting e-policies," even though the amount of business they're booking "is still relatively small," he adds. AIG has 2,000 network security insurance customers and roughly 70% of the global market, Freeman claims.

But IT and business managers should be aware that potentially crippling worms and viruses like the recent Slammer virus typically aren't covered under these newer data security insurance policies.

Why not? Consider the following analogy: Companies can buy fire insurance for 20 buildings in one city because the chance of a fire sweeping through all of the facilities at the same time is pretty remote, says Alan Paller, director of the SANS Institute in Bethesda, Md., a research organization for security managers and systems administrators. "But the rules for viruses are completely different — they can affect everyone," he says. Therefore, insurers typically either won't provide general liability coverage against worms and viruses or will offer only extremely limited property coverage, says Freeman.

Outside of the financial services industry, where electronic transactions with customers are an integral business component and high levels of security are critical, few CIOs and chief security officers are aware of the need for cybersecurity insurance, and senior managers rarely seek their advice when they are considering the company's insurance needs. "We haven't done any work on this yet, but there's a slow groundswell among some companies to begin taking actions on these issues," says RA Vernon, vice president and CIO at Reuters America Inc., which provides information to Wall Street brokerages and the financial services industry.

Before obtaining cybersecurity insurance, companies should have a third party conduct a network security risk assessment to demonstrate compliance to insurers. [See "How to Do an IT Security Audit," QuickLink 35761.] The process includes following security compliance steps that are mapped out by the ISO 17799 standard, a set of controls that detail best practices in information security.

While the ISO standard is widely used, critics say it's too high-level and specifies security practices that are common sense. An example, says Paller: "Make sure your systems are safe." A revamped version of the standard is being written to address some of these shortcomings. "Like any tech-related field, [ISO 17799] is moving in a million different directions at a crazy pace," says Chris Mullins, director of policy and compliance products at Bindview Corp., a security software vendor in Houston.

Evaluation Guidelines

Mullins advises IT managers to follow the guidelines offered by the National Security Agency and the National Institute of Standards and Technology to evaluate their security compliance. These guidelines are also used by some companies to demonstrate their security readiness to would-be insurers, he says.

Insurance companies also look at other factors, such as the frequency of internal security audits, the transfer of internal auditors among business units and the clauses in contracts between companies and their customers and business partners that stipulate the security compliance obligations necessary to receive online access to data.

They also consider human resources policies, says Tracey Vispoli, a manager at Chubb, in Warren, N.J. These include examinations of how employees are trained on IT security practices, how often passwords are changed on laptops and whether organizations conduct criminal background checks of job applicants. "We're not so much concerned with the products [customers] are using to mitigate attacks as we are with the [employee and access] controls and policies they've put in place," she says.

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THE BLACK HOLE

The Computer Security Institute in San Francisco reported these alarming findings, based on the results of its 2002 Computer Crime and Security Survey:

TOTAL LOSSES

44% of respondents were willing and/or able to quantify their financial losses

Within that group, the most-cited reasons for losses were:

TOTAL LOSSES

5.1% attributed losses to theft of proprietary information

4.9% attributed losses to financial fraud

BASE: 503 COMPUTER SECURITY SPECIALISTS IN U.S. ORGANIZATIONS AND GOVERNMENT

THE MISSING CSO

When companies look to buy cybersecurity insurance, CIOs, CSOs and other IT executives are typically absent from the discussions.

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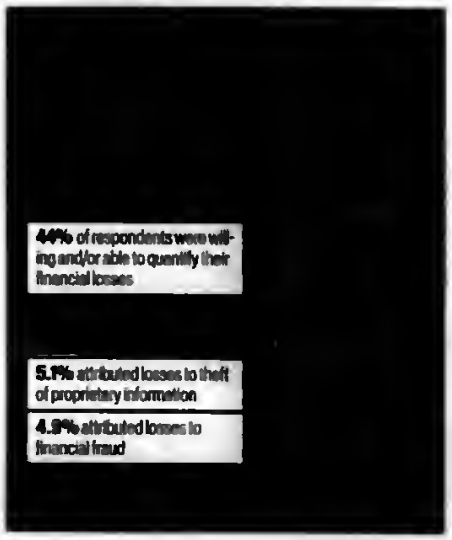
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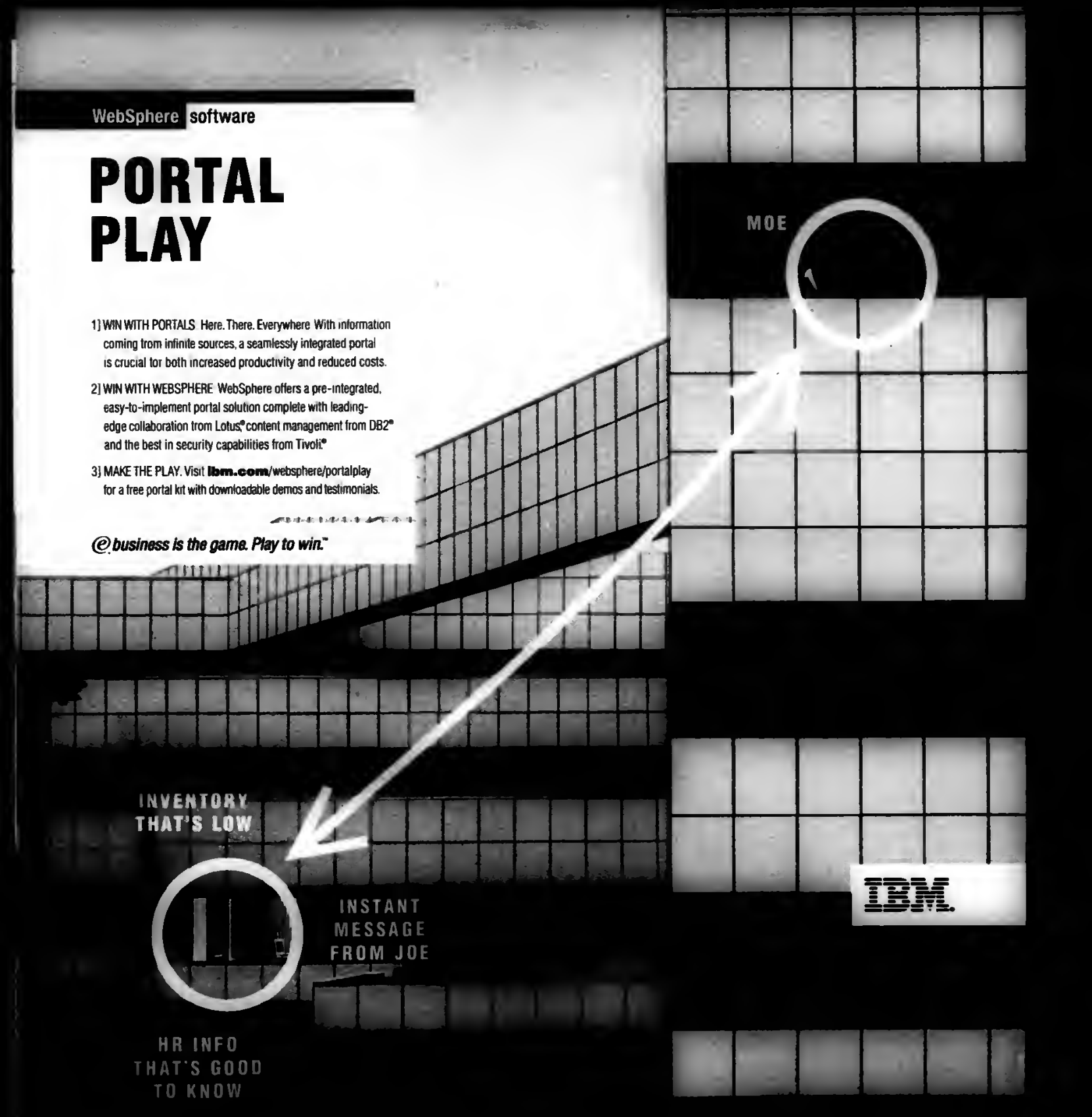
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Sealing the Deal and Collecting Their Due

IT helps salespeople at the front lines and on payday. By Julia King

CALL IT A CLASSIC CASE of silo syndrome. Every month, corporate marketing departments spend hundreds of hours and tens of thousands of dollars conducting research, preparing reports and developing promotional materials designed to help their companies' salespeople sell more products and services. The problem is that salespeople often have no easy way to access the gold mine of information and other intellectual property, such as details about customer preferences and orders, was going untapped by the Rochester, N.Y.-based company's sales force.

That's the business challenge Eloquent Inc. is addressing with its LaunchForce content production and navigation software, which enables Kodak, Hewlett-Packard Co. and several other big companies to deliver a full range of product information — including text, synchronized video, graphics, audio and search capabilities — to globally dispersed sales organizations. Earlier this month, San Mateo, Calif.-based Eloquent merged with Open Text Corp., a knowledge management and collaboration software vendor in Waterloo, Ontario.

The vendor bills the software as a "sales readiness tool" that can give salespeople instant access to information about new products, pricing and special promotions, all of which can be critical to sealing a deal and boosting sales.

In August, Kodak deployed Eloquent's software as a means of establishing a central Web-based repository for all product information and collateral marketing materials.

The results so far have been "very positive," Sanford says. But, he adds, "I don't think you can say it increases sales. What it has really done is allow people to get more done and spend more face time with customers as opposed to calling around for information on the phone."

"Our sales reps had no confidence in our ability to produce accurate sales reports."

DAN ELDRIDGE, Amersham Biosciences

At HP's Nonstop Enterprise Division in Cupertino, Calif., program manager Tom Hill says the Eloquent system has delivered a tenfold return on investment since its deployment in November 2001. One of the system's biggest tests came with the merger of HP and Compaq Computer Corp., when the newly combined company needed to get hundreds of salespeople up to speed very quickly on an expanded product line.

"The business problem was real simple. Before the merger was finalized on May 7, we couldn't do any [product] training of salespeople prior to that date," Hill explains. "We also didn't have travel money to spend."

Instead, all of the Compaq product information, complete with technical manuals, graphics, video and audio, was loaded into the Eloquent system running on a Compaq/HP server, which was then accessible simultaneously via the Web to HP's salespeople around the globe.

Hill says HP is in the process of "closing the loop on sales readiness" by tapping the Eloquent software's capability to track and report on how frequently people actually use the system and to measure what they learn from it. For example, Hill says he can provide a sales manager in California with information on how a sales and support engineer in El Salvador performs on an online test about a particular product. "We're finally taking learning content and integrating it with sales," Hill says. "When we have additional product lines and salespeople, it will probably add up to a ten- to twentyfold ROI on the system."

At $1 billion Amersham Biosciences Corp., the business issue wasn't getting information to salespeople, but rather paying them accurately for what they had already sold, says Dan Eldridge, manager of business operations at the Piscataway, N.J.-based company. Again, information silos — in the form of dozens of Microsoft Excel spreadsheets with data downloaded from Oracle Corp. databases — were to blame.

"We were managing incentive compensation for 150 to 160 employees via Excel spreadsheets, which was a very manual process, very labor-intensive and fraught with error," Eldridge says. "Our sales reps had no confidence in our ability to produce accurate sales reports and accurate incentive [payments]. The financial quarter would end, and we'd begin calculating incentives, and then it would take us six weeks to pay. After that, we'd spend the next four weeks putting out fires, making corrections. So we'd spend 12 weeks out of every quarter paying incentives."

The issue came to a head when Amersham named a new president, who spent his first weeks in office getting an earful from disgruntled salespeople.

Eldridge evaluated payment software from several vendors, including Siebel Systems Inc. and Callidus Software Inc. Ultimately, he opted to deploy Conshohocken, Pa.-based Synygy Inc.'s compensation software under an application service provider model.

Amersham electronically transfers its sales data to Synygy once a week, and compensation payments are calculated and paid on an ongoing basis. Amersham pays Synygy a monthly fee that Eldridge declined to disclose, but he says the ROI has already been positive.

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Not Your Average Paycheck

Salespeople's pay is based on a combination of ever-shifting factors. This year, for example, 90% of companies will change their sales compensation plans, which typically include the following metrics:

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- **Quotas**
- **Customer retention**
- **Customer satisfaction**
- **Team-based measures**
- **Product mix**

SOURCES: THE ALEXANDER GROUP INC. AND THE AMERICAN COMPENSATION ASSOCIATION

Overpayment of incentive and sales compensation

Systems for tracking commissions and bonuses

Incentive management systems

THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION

Sealing the Deal and Collecting Their Due

IT helps salespeople at the front lines and on payday. **By Julia King**

CALL IT A CLASSIC CASE of silo syndrome. Every month, corporate marketing departments spend hundreds of hours and tens of thousands of dollars conducting research, preparing reports and developing promotional materials designed to help their companies' salespeople sell more products and services. The problem is that salespeople often have no easy way to access the gold mine of information.

"Like a lot of companies, Kodak was good at collecting data but not very good at sharing and updating that data," says James Sanford, senior manager of sales communication and strategy development at Eastman Kodak Co.'s consumer imaging unit in Atlanta. The upshot was that a lot of scattered but valuable marketing information and other intellectual property, such as details about customer preferences and orders, was going untapped by the Rochester, N.Y.-based company's sales force.

That's the business challenge Eloquent Inc. is addressing with its LaunchForce content production and navigation software, which enables Kodak, Hewlett-Packard Co. and several other big companies to deliver a full range of product information — including text, synchronized video, graphics, audio and search capabilities — to globally dispersed sales organizations. Earlier this month, San Mateo, Calif.-based Eloquent merged with Open Text Corp., a knowledge management and collaboration software vendor in Waterloo, Ontario.

The vendor bills the software as a "sales readiness tool" that can give salespeople instant access to information about new products, pricing and special promotions, all of which can be critical to sealing a deal and boosting sales.

In August, Kodak deployed Eloquent's software as a means of establishing a central Web-based repository for all product information and collateral marketing materials.

The results so far have been "very positive," Sanford says. But, he adds, "I don't think you can say it increases sales. What it has really done is allow people to get more done and spend more face time with customers as opposed to calling around for information on the phone."

"Our sales reps had no confidence in our ability to produce accurate sales reports."

DAN ELDRIDGE, Amersham Biosciences

At HP's Nonstop Enterprise Division in Cupertino, Calif., program manager Tom Hill says the Eloquent system has delivered a tenfold return on investment since its deployment in November 2001. One of the system's biggest tests came with the merger of HP and Compaq Computer Corp., when the newly combined company needed to get hundreds of salespeople up to speed very quickly on an expanded product line.

"The business problem was real simple. Before the merger was finalized on May 7, we couldn't do any [product] training of salespeople prior to that date," Hill explains. "We also didn't have travel money to spend."

Instead, all of the Compaq product information, complete with technical manuals, graphics, video and audio, was loaded into the Eloquent system running on a Compaq/HP server, which was then accessible simultaneously via the Web to HP's salespeople around the globe.

Hill says HP is in the process of "closing the loop on sales readiness" by tapping the Eloquent software's capability to track and report on how frequently people actually use the system and to measure what they learn from it. For example, Hill says he can provide a sales manager in California with information on how a sales and support engineer in El Salvador performs on an online test about a particular product. "We're finally taking learning content and integrating it with sales," Hill says. "When we have additional product lines and salespeople, it will probably add up to a ten- to twentyfold ROI on the system."

At $1 billion Amersham Biosciences Corp., the business issue wasn't getting information to salespeople, but rather paying them accurately for what they had already sold, says Dan Eldridge, manager of business operations at the Piscataway, N.J.-based company. Again, information silos — in the form of dozens of Microsoft Excel spreadsheets with data downloaded from Oracle Corp. databases — were to blame.

"We were managing incentive compensation for 150 to 160 employees via Excel spreadsheets, which was a very manual process, very labor-intensive and fraught with error," Eldridge says. "Our sales reps had no confidence in our ability to produce accurate sales reports and accurate incentive [payments]. The financial quarter would end, and we'd begin calculating incentives, and then it would take us six weeks to pay. After that, we'd spend the next four weeks putting out fires, making corrections. So we'd spend 12 weeks out of every quarter paying incentives."

The issue came to a head when Amersham named a new president, who spent his first weeks in office getting an earful from disgruntled salespeople.

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BRIEFS

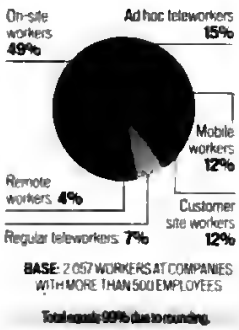
Purchasing Tactics

Business managers and chief financial officers are playing an increasingly important role in IT procurement, according to research firm Summit Strategies Inc. in Boston. Once a company decides to evaluate or do business with a vendor, Summit said, the business side will turn up the heat on the vendor using five tactics:

- Testing the waters with small, measurable pilot projects.
- Forcing the vendor to share the business risk.
- Shifting to pay-as-you-go strategies.
- Seeking offshore professional services support.
- Training the IT staff as contract managers rather than as pure technologists.

Where We Work

According to a recent survey, a majority (51%) of employees work off-site, but from various locations.



BASE: 2,057 WORKERS AT COMPANIES WITH MORE THAN 500 EMPLOYEES

Total equals 99% due to rounding.

SOURCE: Ajilon Professional Staffing, Atlanta

Outsourcing Deals Are Falling Short

Through 2003, senior executives will give failing grades to 50% of all outsourced IT deals because they don't deliver the anticipated value, according to Gartner Inc. One problem is that many companies have failed to develop a comprehensive strategy and instead try to fix problems and change contracts on the fly. Gartner estimates that fewer than 30% of companies have formal plans for managing long-term relationships with external IT service providers.

MICHAEL H. HUGOS

Working Hard: Making the Same Mistakes Over and Over

I BELIEVE that IT is not yet a profession because we do not learn from our mistakes. We do not change our behavior. We have not codified the body of knowledge gained from the past 40 years of experience, and we do not teach this knowledge in any coherent manner to those entering or already working in the field. Massive, multimillion-dollar debacles are not just isolated occurrences in IT. They are the norm.

We are all aware of The Standish Group's studies of the past few years that document a 70% failure rate for IT projects. Some 30% fail outright, and another 40% drag on for years, propped up by buge cash infusions until they are finally shut down.

How can a group that has a 70% failure rate call itself a profession? What if surgeons had a 70 % failure rate? What if airline pilots had a 70% failure rate? Would they even be allowed to continue to practice their professions? People in the construction industry routinely build buildings that don't fall down until they are torn down. We IT folks — many of whom have fancy advanced degrees — ean barely build an accounting system that will survive a month-end close.

Companies can't afford to continue throwing money at IT projects and accept the paltry 30% success rate that's the current norm. Yes, the IT field is full of complexity. Yes, the pace of change seems overwhelming at times. Yet if we who elaim to be professionals in the field can't define a basic set of practices and use them to drastically increase the suceess rate of IT projects, then we have little reason to exist.

I propose a set of seven design guidelines and six organizational principles for developing informatiun systems. These guidelines and principles should remain eonstant over time, regardless of the technology being used. They create a clear and accurate framework that codifies what has been learned about building informatioo systems. The simplicity of the framework makes it readily understandable so that it can be widely used.

Design Guidelines

A system design that respects all seven of these guidelines is the best. It's still a eompeteot design if one of these guidelines is violated, as long as it's not the first guideline. If two guidelines are violated, there need to be very good reasons for duing so, and compensations must be made for those guidelines that are broken. If tbree or more guidelines are broken, then the design is seriously flawed, and the system can't be successfully built

The guidelines are as follows:

1. Closely align systems projects to respond to specific business opportunities or needs.
2. Use systems to change the competitive landscape.
3. Leverage the strengths of existing systems to build new systems.
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5. Break the design of big systems into smaller subsystems to reduce the nverall complexity and lower the risk of building each subsystem.
6. Don't try to build a system whose complexity exceeds the organization's capabilities.
7. Don't renew a project that has failed once using the same system design and project organization.

Organizational Principles

If the design of a system respects the guidelines listed above, then the use of these six principles will ensure a successful project. If any one of these principles is ignored, then special precautions must be taken to compensate for that. If two or more prineiples are violated, then the project will flounder and fail.

The principles are as follows:

1. Make sure that every project has a qualified full-time leader with overall responsibility and authority.
2. Define a set of measurable and nonoverlapping objectives that are both necessary and sufficient to build the system that's the goal of the project.
3. Assign project objectives (or subsystems) to teams of two to seven people, with hands-on team leaders and the appropriate mix of business and technical skills.
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We IT people need to understand these guidelines and practlce these principles in different situations. The ability to do this consistently is what will deliver tbe successful results that enable us to truly eall ourselves professionals.

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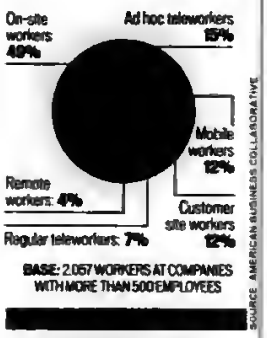

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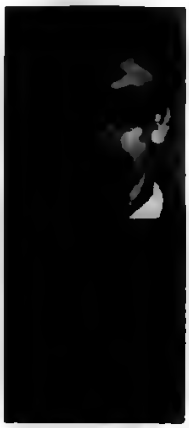

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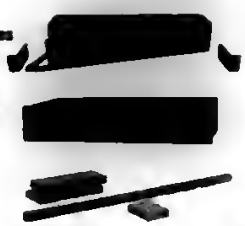

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International Advanced Business Computing, Inc now has 2 Computer Program Analyst positions available. Incumbent should hold a BS in Computer Science or Engineering and have at least one (1) year of experience in the industry. Please send your resume and credentials to Human Resources at IABC, 5634 Owens Drive, Suite 208, Pleasanton CA 94588

SAS Programmer. Provide computer support and programming services to facilitate the data management and analysis for CDC. Write SAS programs for data analysis, coordinate, develop, and maintain large databases and applications, and provide data, graphics, and analysis to appropriate branch personnel. Req. BS in CS or related field. Must be proficient in SAS/AF, SAS/FSP, SAS Intranet, and Base SAS. 40hr/wk, 9-5. Contact Business Computer Applications, Inc. at 2180 Satellite Blvd., Suite 325, Duluth, GA 30097.

Programmer Analyst. Experience w/ C++, VB, Java. Must have BS in CS, Comp. Eng., or EE. Must have authority to work in US. Send cover letter and resume to Jennifer c/o PCS at 1415 N. Dayton, Chicago, IL 60622.

TAMKO Roofing Products, Inc seeks Computer Programmer in our Joplin, MO loc. Pos. involves coding and testing, work with data, draw flowcharts, write operator instructions. Must have BS in Computer Science or related field + 2 yrs relevant experience. Send résumé to TAMKO Roofing, 220 West Fourth Street, Joplin, MO 64801.

Exp'd Prog/Sys Analysts, S/W Enggs, DBA's required to design/develop appls using some of the foll: C, C++, VB, PB, Dev 2000, Pro*C, Java, J2EE, HTML, JDBC, EGRET, EPI-INFO, XML, JSP, Servlets, ASP, SQL, COBOL, CICS, VSAM, XGEN packages (SAP, BAAN, Oracle, Peoplesoft) web/wireless/internet technologies, data warehousing and decision support appls with MS SQL Server, Sybase, Oracle, DB2 on MVS, UNIX, Windows, UNISYS platforms. All positions req BS/MS or foreign equiv in CS/Engg /Sci./Math/Busss Admin./related field with relevant exp. High salaries. F/T. Travel required. Resumes to HR, Saksin Associates, Inc., 405 6th Ave., Ste 102, Des Moines, IA 50309

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SOFTWARE ENGINEER Requirements: developing banking and financial applications using Oracle and utilities as a backend and Oracle software development tools as the front end. Developing Data Warehousing project using Oracle as a backend. Ability in using Pro*C, PL/SQL, Visual Basic, Developer 2000 and Oracle utilities. Knowledge in UNIX, MS-DOS, Windows 3.0/95/NT operating systems. The job duties are Analysis of current procedures and problems to refine and convert the data to programmable form; determine output requirements; study existing system to evaluate effectiveness, upgrade systems presently in use, develop, test, and implement new software, observe functioning of newly implemented systems and programs for trouble areas; correct systems/programs as necessary. Requires Master's in Computers or Sciences or equivalent, no experience necessary 40 hours per week at $71,000 per year. Please send 2 copies of resume to Case #200115618 Labor Exchange Office, 19 Stanford St, 1st Floor Boston, MA 02114

SENIOR APPLICATIONS DEVELOPER (SENIOR SOFTWARE ENGINEER) - 40 Hours Per Week, 9 a.m. - 5 p.m., $68,453.00 per year. Located in Miami, FL. Requires Bachelor's Degree or U.S. equivalent in Computer Science or Management Information Systems and 4 years experience in the job offered or related occupation of any combination of Software Developer and/or Software Engineer. Design, develop and implement medium to complex client Server applications. Support and maintain existing applications in a Client Server environment. Use and adhere to a Software Development Life Cycle Process. Interact with business clients to produce meaningful business requirements. Develop and maintain detailed project plans and resource estimate for projects. Excellent programming skills in any/all of the following: PowerBuilder, Visual Basic, Oracle Developer and working knowledge of Oracle SQL Server databases. Send resume to maria.ferrante-wilson@coulter.com at Beckman Coulter Inc. An EOE

Software Engineer Analyze s/ware dvlpmt project reqmts; dsgn objects & algorithms; implmt s/ware dvlpmt project solutions; write test cases for quality assurance testing of s/ware. Req: BS in Engg, Comp Sci or related field + 2yrs exp in job offd or as S/ware Dvlpr or similar duties under a different job title. 2 yrs exp w/CASE s/ware dvlpmt, C++ lang & object-oriented modelling, MS Dvlpmt Studio, Windows NT OS. Exp w/modeling real world engg systems w/simulation s/ware. Demonstrated knowl of data architecture & dsgn to engg s/ware systems, incl Comp Aided S/ware Systems. 40hrs/wk, $60K/yr. Must have proof of legal auth to work in US. Send your resume to IA Workforce Center, 1700 S 1st Ave., Iowa City, IA 52244-2390. Please refer to JO IA1101696. Employer paid ad.

Software Test Engineer to work under supervision to conduct performance tests on risk assessment software using object oriented technologies including C++ and Apache Ant. Apply knowledge of statistical and probability mathematics and programming to test and/or modify risk assessment algorithms. Requires a Bachelor's degree in Computer Science and 2 years experience. Oakland, CA job location. Contact L. Phillips, ABS and Affiliated Companies, 16855 Northchase Dr., Houston, TX 77060. Refer to job HC-QAE.

SOFTWARE ENGINEER: duties include design, build, maintain, and enhance a desktop system using Microsoft technologies including VB 6.0, SQL, and MS Access which will track and administer executive deferrals in a non-qualified 401(K) plan; work with Web Application Developers to the web-enablement of this product; design and ensure database integrity; improve system optimization on a variety of platforms; work in conjunction with software quality analysts to define testing parameters and enhance system performance. SE will also design, build and maintain an internet-based financial application integrating financial products of multiple carriers. Involves load balancing and system optimization. Min req'ts: BS/BA (foreign equivalent accepted) in CS, IT, Engineering or related and 18 mths of exper in the job offered or 18 mths exper in related occup. as an Analyst, Engineer, Programmer or any related occup. 18 mths of exper may be pre or post BS/BA. PLUS, must have working experience with VB, C, C++ and MS Windows Operating Systems. Must have experience with document tracking functionality of multinational financial modules. Basic pay is $56,763 per year for full-time employment (Mon.-Fri., 9-5) and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 200115410, Labor Exchange Office, 19 Stanford Street, 1st Floor, Boston, MA 02114

Principal Consultant Software Engineer/Developer to serve as a lead technical consultant responsible for analysis, design, development, and implementation of Web applications for both Internet and Intranet. Will work with team of developers using Java and C/C++ under Windows and UNIX to develop, test, and debug client/server applications in development environments including Symantec Cafe, Visual J++ or Visual C++. Will perform all graphical user interface (GUI) and database development for various systems. Will establish and monitor project plans, working directly with user community for project definition. Will provide technical evaluation estimates on initiatives and maintain user-oriented group relationships. Requires Bachelor's degree in Computer Science, Engineering, Mathematics, or Physics and six (6) years experience in job offered OR six (6) years experience in developing client/server applications. OR, in the alternative, Master's degree in Computer Science, Engineering, Mathematics, or Physics and four (4) years experience in job offered OR four (4) years experience in developing client/server applications. Candidate must also possess demonstrated expertise developing applications in Java and C++ as well as demonstrated expertise in OO design and analysis. Salary: $87,500/yr. Mon-Fri 8:00AM-5:00PM. Submit two copies of resume to Case # 200116237 Labor Exchange Office, 19 Stanford St., 1st Fl., Boston, MA 02114. EOE. Applicants must be eligible to accept full-time employment in U.S.

Programmer Analysts for IT company in Harrisburg, PA to: research, design, test & develop computer software systems & applications using ASP, HTML, DHTML, Perl, IIS, I-planet Webserver, Oracle, CRM tools & apply principles & techniques of computer science. Use operating system Win NT. Bachelors or equivalent in Computer Science/Science/Engineering or equivalent plus 2 years experience in job offered. Will accept any equiv combin of edu, training &/or experience that meets the minimum requirements. Resume to: Sysatlas, Inc-a division of Advanced Data Systems at 3883 Union Deposit Road, Harrisburg, PA 17109, Email: al@adsincorp.com. , fax: 717-561-4263.

SDG Corporation

Seeks software engineering consults to work in West Chester, Ohio with experience in any six of the following technologies: Oracle, LDAP, Unix, MS SQL server, Java,Web Logic, Rational Rose, Apache and Planet Server. Oracle Application DBA, (Norwalk, CT.) required experience in team leadership, designing and administering Oracle, ERP and distributed database architecture solutions under Windows NT, and Unix. Relocation within USA possible.

Security Architect (Norwalk CT.) required experience in designing, implementing and managing networks based on NT, Unix and Novell including design and implementation of network security systems. Relocation within USA possible.

Oracle Applications DBA - Norwalk, CT. Require experience in team leadership and designing and administering Oracle ERP and distributed database architecture solutions under Windows NT and Unix. Relocation within USA Possible. Attractive compensation package.

Software Engineer (QA) - Norwalk Ct. Job entails and requires experience in development and testing of applications using DHTML, Oracle, Unix, SQL, Server and Visual Basic. Require Bachelors and 1 year experience.

Attractive compensation package. Send resume to Catherine Fanucchi @ SDG Corp. 65 Water Street Norwalk, Ct 06854

TechNation Software Consulting, Inc. a software consulting company with its main place of business at Sioux Falls, SD has a position for a software professional whose duties will involve gathering requirements, doing business analysis and proposing solutions for IT needs of healthcare and pharmaceutical industry. The individual will build and lead a team to develop solutions for software dealing with clinical trials for the pharmaceutical industry.

Job Requirements: Bachelors degree with a concentration in computer science or equivalent with additional coursework in Medicine or pharmacology. Should have knowledge of clinical trials along with a minimum of 3 years experience in software programming. Analysis and three years experience in business development.

TechNation provides onsite consulting services to clients across the United States and hence a key requirement for this position is that candidates must be willing to relocate across the country for periods between 3-6 months or as needed.

Send resumes to Runa Troff 300 N Dakota Ave. Suite 6505B, Sioux Falls, SD 57104 or email rtroff@tnacinc.com

Senior Network Engineer Naperville, IL Research, design, development, testing, implementation and configuration of LAN's, WAN's and related equipment and components. Work with Cisco networks, Cisco IP Telephony and information systems security. Required: Bachelor's degree in computer science/engineering/mathematics/related, and all of the following certifications: Cisco Certified Internetwork Expert (CCIE), Cisco IP Telephony Support Specialist (CIPT), and Certified Information Systems Security Professional (CISSP). Employer will accept US or foreign equivalent of Bachelor's degree to computer science/engineering/mathematics/related. NO PHONE CALLS. Forward resumes to: CDS Office Technologies, Mr. Michael Patterson, 512 South Dirksen Parkway, Springfield, IL 62703.

PRINCIPAL EMBEDDED SOFTWARE ENGINEER. Duties include: As the technical leader of the development team, PESE is responsible for developing specifications, architectures design, implementation, unit testing, integration and maintenance of embedded software on a DSP platform. Daily duties include: writing the functional specifications, decomposing the functional specifications into component requirements and estimating the time-to-complete based on the requirements and preliminary design information, leading architecture development efforts, maintenance of existing DSP firmware to support existing and future software releases, and mentoring junior engineers. Daily work with the TRxStream series product line, which consists of PCI and cPCI voice IP telephony, fax, and telephony hardware, embedded software (firmware), device drivers, and APIs. Min. Reqts: BS/BA (foreign equivalent accepted) in CS, IT, EE or related field of study AND 8 years of experience in the job offered OR 8 years in any occupation with experience with development of real-time embedded systems. PLUS, must have demonstrated experience and working knowledge of the following: (1) Programming skills: C/C++ expert, TI DSP assembly language program and real-time embedded systems program (in real-time speech compression, digital filtering & tone detection); and (2) Voice over IP and PSTN telephony technologies and protocols. Basic pay range is: $80,000 to $110,000 year for FT (9-5) and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2001 16454, Labor Exchange Office, 19 Stanford Street, 1st Floor, Boston, MA 02114

Lead Web Applications Developer for Montgomery, AL office, to develop & maintain large-scale internet/intranet applications. Assist in site architecture creation & develop linkages between enterprise/legacy system & online data & services using knowledge of client-server architecture & relational database systems & applications. Migrate & integrate Customer Relationship Management (CRM) Tools with Genesys CTI. Work with advanced web development & maintenance tools such as HTML, JavaScript, SQL, Photoshop, ASP, XML, CGI, etc. Evaluate & recommend third party vendor technologies & develop growth plans. Required: M & C & 5 2yrs exp. M-F 40hrs/wk. Frequent relocation within the U.S. way for necessary. Send resume to J. Zurich, HR, AIHE, AC Technologies Inc. 2751 Prosperity Avenue Suite 500, Fairfax, VA 22031

SAP Information Systems Consultant Analyze design, develop & implement complex IT projects using SAP ABAP/4 for production planning & materials & warehouse mgmt. Design customer specific programs using EDI & ALE. Map interfaces from legacy systems. Provide technical alternatives & expertise to ensure effective IT implementation & quality control. May train Analysts, investigate emerging IT & suggest improvements. Write technical papers. Consult with levels of IT organization & external IT personnel. Must be willing to travel to project sites throughout US 20-25% of time. Must have BS in Comp Sci, Engineering, Business or related field + 3 yrs exp in job offered or SAP Programmer/Analyst. 8:30am - 5pm, M-F OT as needed $101,043/Yr. Reply to Job Order #WEBJ13901, Manager, Beaver County Team PA CareerLink, 2103 North Ave., Beaver Falls, PA 15010-3997

NETWORK ADMINISTRATOR: Duties include: Maintain company's internal network systems, workstations and infrastructure including routers, firewalls, and switches. Diagnose, research, tests, and analyze data to recommend communications hardware and software. Install communications hardware and software. Troubleshoot and identify areas of operation which need upgraded equipment, such as modems, fiber optic cables, and telephone wires. Develop and write procedures for installation, use, and solving problems of communications hardware and software. Monitor system performance and efficiency. Train users in use of equipment and software. Maintenance of Cisco 7200 & 2800 Routers and Checkpoint IP400 & IP110 series Firewalls. Min. Reqts: BS/BA (foreign equivalent accepted) in CS, IT, EE or related AND 2 yrs exp. in the job offered OR 2 yrs exp. in related occup. as systems analyst, systems engineer or related occup. PLUS must have demonstrated knowledge of: (1) Implementing, administering and configuring Windows NT 4.0 Server, NT Workstation, and UNIX Network Systems, (2) Installing and maintaining network systems including routers, firewalls, switches and email accounts; and (3) Installing and maintaining Cisco 7200 & 2800 routers, Checkpoint IP400 & IP110 series firewalls, and PIX firewalls. Basic pay RANGE is $47,000 to $65,000 per year for full-time employment (Mon.-Fri., 9-5) and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2001 14886, Labor Exchange Office, 19 Stanford Street, 1st Floor, Boston, MA 02114

Technical Project Manager - Manage direction & control of software development for credit & debit cards, visa & master cards, define project plans for personnel, finances & equipment, test & implement software for credit & debit cards, coordinate stages of dev. for credit cards, works w/ design & specs of different systems models for collections of delinquent cust, authorization rights of data, design & implementation using oracle works w/ MS project, MS word, MS excel, Outlook & Power Point, design & develop improvements of systems production, define & manage implementation of upgrades, maint Electronically System Manuals, Tech Specs, Users & Operation Manuals, update & document the working of/programs of assigned projects, 40 hrs per wk M-F 8AM-5PM, BS in System Engineering & 2 yrs exp in job offered. Send resume to Technicard, Inc. Attn: Oscar Galvez/Carlos Ballesteros, 3191 Coral Way Suite 600, Miami, Florida 33145

Computer Support Specialist. Analyze user requirements and business procedures and problems to automate processing & improve systems, design and integrate systems to facilitate business strategy. Bach. plus exper. required. Competitive salary. Send resumes to MSI, 800 N.E. 195th St. North Miami Beach, Florida 33179

Senior Programmer Analyst. Duties include: Under general direction, the SAPA formulates and defines systems scope and objectives in order to design, develop and or modify information systems. Working independently with little direct supervision will assist Project Leader in the development of detailed system specifications for major system installations. Duties include: define business systems requirements, perform feasibility studies to analyze cost/benefit, trade-off of system solutions, relate systems design specifications and documentation code programs, generate program test data and troubleshoot programs and provide technical guidance to less experienced Programmer/Analysts. Demonstrated aptitude towards problem identification resolution and comprehension and interpretation of technical procedures. Min. Qual.: BS/BA (foreign equivalent accepted) in CS, IT, EE or related AND 2 yrs of exp. in the job offered OR 2 yrs exp. in related occupation in programming or systems analyst or related occupation. PLUS must have: (1) demonstrated experience and knowledge with all processes evolved in systems analysis and programming including design factors, HW and SW requirements, system facilities, and job control procedures; (2) Technical proficiency in the development, implementation, and maintenance of systems gained through exposure to at least one major systems installation; and (3) Demonstrated experience with the following computer languages/systems: Cold Fusion, Java, JavaScript and MS SQL server. Basic pay range $60,000 to 68,000 per year, full time, 40 hrs/wk, company benefits. EEO. Submit 2 resumes and respond to Case No. 200115601 Labor Exchange Office 19 Stanford Street, 1st Floor, Boston, MA 02114

Multiple openings at Norcross, GA and Imperial, PA for Prog/Sys Analysts. DBA's, S/W Engineers to design/develop S/W appls using some of the following: COGNOS, datawarehousing, Cobol, CICS, DB2, Java, IPB, HTML, XML, C++, VB, Oracle Dev 2000, wireless web, OO technologies, SAP, ABAP/4, Oracle/Sybase/Informix database admin; Unix/NT system admin; BS/MS or foreign equiv in CS, Engg, Science, Math, Business or related field and relevant exp. High salaries, F/T. Travel involved. Indicate office location desired. Respond to: HR, Smartsoft International Inc., 4896 South Old Peachtree Road, Ste 200, Norcross, GA 30071

Gambro Inc. seeks applicants for position of Sr. Software Developer to work in Lakewood, CO to be responsible for full life-cycle software development in C++ and Oracle database management systems for information systems and business applications in blood bank technology. Position requires a bachelor's degree in computer science or electrical or electronic engineering and 2 yrs as a software developer using C++ and RDBMS and developing user interfaces and business applications including 1 yr exp working on blood banking info technology. Also requires working knowledge of Oracle 8i, PL/SQL, ADO and Object-oriented analysis and design. Respond by resume to Mark Gersinger Gambro Inc., 10811 W. Collins Ave., Lakewood, CO 80215

BEA Systems, Inc. currently has opportunities available for the following positions (various levels/types) for locations throughout the U.S., including CA (San Jose & San Francisco); CO (Boulder, Denver, Colorado Springs); WA (Seattle & Kirkland); MA (Burlington); and NJ (Liberty Corner)

Software Engineers*
Systems Analysts
Database / Systems Administrators
Product / Project / Technical Manager
*Travel may be required

Please reference CW403 when you apply. Send resume to BEA Systems, Inc., Attn: HR-Staffing, 2315 North First Street, San Jose, CA 95131. Fax: (408) 570-8858. E-mail: Refer to career section of www.bea.com. Principals only. EOE.

bea

SAP CONSULTANTS Develop & implem functional modules such as FI/CO MM, SD, PP, ABAP Progr

PROGR ANALYSTS & DESIGN ENGINEERS Design, develop, implem data migration, testing of Bus Appln, PDM systems-Metaphase/ Windchill/ Enovia, Auto Components. Skills such as C, C++, Java, Oracle RDBMS, SAP, Unix,CATIA,Pro Engineer, CAD/CAM req'd ICAD & other KBE OO sys devel need CAD/CAM/CAE exp

BS, MS or equiv in CS, Mech, EE, Bus Adm, Finance or related field & 1-5 yrs exp in the req'd area

Positions available in Detroit, MI & at client sites throughout US. Pls mail resume to HR, 33533 West 12Mile Rd., #131, Farmington Hills, MI 48331

DATABASE ADMINISTRATOR

Database Administrator to do logical and physical design of Oracle 11i database. Code test and implement Oracle scripts applying knowledge of Database Management Systems. Calculate optimum values for Oracle database parameters, performance tune Oracle databases. Model Oracle database security, manage backup and recovery of Oracle databases, make changes to Oracle database applications using knowledge of Oracle Applications 11i, Discoverer 4i, VHDL, Jinitiator and NLS/MLS. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a Database Administrator, expertise in Oracle database administration which includes logical design, physical design, performance tuning, backup and recovery, coding of scripts, knowledge of Oracle Applications 11i, Discoverer 4i, VHDL, Jinitiator and NLS/MLS. Salary: $85,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and relocation. Apply: Fayette County Team PA CareerLink, Attn: JS Supervisor, 32 Iowa St., Uniontown, PA 15401. Job No: WEB3149978

COMSYS is an established IT consulting firm that serves leading corporations including 174 of the Fortune 500. With COMSYS, you get: Extensive Benefits, Additional Compensation for referrals and Professional Challenges with training and assignments to keep you at the forefront of technology. With 30 offices, we need the services of experienced consultants across the US

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COMPUTER/IT

Operations Info Systems Eng. Req Bach deg or equiv foreign edu in Comp Eng, Comp Sci or Info Systems & 4 yrs of exp in the job offered or 4 yrs of exp in systems analysis. All of exp must incl info systems & software analysis, maintenance, implementation & reporting. Must also have exp managing integral info syst projects, incl coord activities of other related depts incl sales, production & accounting depts. Must have worked w/business reporting systems. Must be fluent in Spanish & English. Exercise resp for the operation of key info syst & software analysis, maintenance, modific, implem & reporting activities & product standard monthly info syst activity & status reports for mgmt. Util threat of HFC tech assist in analysis & negotiations for fiber optic comm systems. 40 hrs/wk. Send resume to The Patillo Companies Ltd. Attn: HR Dept, P.O. Box 67, Tucker, GA 30085 and/or resume@ecelaro.com.

Blue Star Infotech is hiring all levels of Software Engineers, Prog/Analysts, Bus Analysts (technical), Business Dev Heads, General & Operations Managers, Project Managers & Database Administrators. Send resumes to Neerja Prashad, Blue Star Infotech, 550 Valley Way, Milpitas, CA 95035. May be placed at client sites nationwide.

Analysis programmer I & II positions available for pharmaceutical research company PRA International of Lenexa, KS. Requirements include B.S. in computer science, software engineering or information technology and related experience in analysis programming, statistical data analysis and clinical database programming in either a medical or pharmaceutical setting. Send resume to Hilary Reed, 16400 College Blvd, Lenexa, KS 66219.

Programmer Analyst (Micro/Web) - Multiple Openings

Structured systems analysis, design development, testing, quality assurance implementation, integration, maintenance and support of integrated client-server based systems for business, financial, banking, manufacturing and other commercial business application systems in a multi-hardware/multi-software environment using centralized or distributed relational database management systems, 4GLs (Fourth Generation Languages) and other GUI (Graphical User Interface) front-end tools. Analyses, design and development of client-server applications using object-oriented methodology. Bachelor's Degree (or equivalent) in Computer Science-Math/Engineering/Science /Business-Commerce and 1 yr. experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 2 of B, or 2 of A and 1 of B, or 3 of A. A includes Oracle, Sybase, Informix, SQL Server, Progress, Ingres, Access and Proxy Server and B includes PowerBuilder, Visual Basic, MS-Windows, Visual C++, JAM, APT-SQL, SQL*FORMS, ESQL/C, GUPTA SQL, Progress 4GL, Informix 4GL, Ingres 4GL, C, Java, Lotus Notes, HTML, CGI, IIS, ASP, Front Page, Perl and Java Development Kit (JDK). High mobility preferred. 40 hrs/week, 8 am - 5 pm. $67,984 - $78,000 per year. Qualified applicants should contact or send resume to Site Administrator, Greene County Team PA CareerLink, 4 West High Street, Waynesburg, PA 15370-1324. Refer to Job Order # WEB 312059

Programmer Analyst (Micro/Web) - Multiple Openings

Structured systems analysis, design development, testing, quality assurance implementation, integration, maintenance and support of integrated client-server based systems for business, financial, banking, manufacturing and other commercial business application systems in a multi-hardware/multi-software environment using centralized or distributed relational database management systems, 4GLs (Fourth Generation Languages) and other GUI (Graphical User Interface) front-end tools. Analyses, design and development of client-server applications using object-oriented methodology. Bachelor's Degree (or equivalent) in Computer Science-Math/Engineering/Science /Business-Commerce and 1 yr. experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 2 of B, or 2 of A and 1 of B, or 3 of A. A includes Oracle, Sybase, Informix, SQL Server, Progress, Ingres, Access and Proxy Server and B includes PowerBuilder, Visual Basic, MS-Windows, Visual C++, JAM, APT-SQL, SQL*FORMS, ESQL/C, GUPTA SQL, Progress 4GL, Informix 4GL, Ingres 4GL, C, Java, Lotus Notes, HTML, CGI, IIS, ASP, Front Page, Perl and Java Development Kit (JDK). High mobility preferred. 40 hrs/week, 8 am - 5 pm. $67,984 - $78,000 per year. Qualified applicants should contact or send resume to Site Administrator, Greene County Team PA CareerLink, 4 West High Street, Waynesburg, PA 15370-1324. Refer to Job Order # WEB 312021

SYSTEMS ANALYST to analyze, design, develop and maintain web-based business critical credit card application software systems using Java, Servlets, JSP, XML, JDBC, Oracle, C++ and Weblogic under UNIX and Windows NT operating systems. Require B.S. degree (or equivalent work experience) in Computer Science/Engineering, or a closely related field with two years of experience in the job offered or as a Programmer/Analyst or Programmer. Competitive salary offered. Send resume to Sandra A. Ricks, Citibank, Universal Card Services, 8787 Baypine Road, Jacksonville, FL 32256. Attn: Job RS.

COMPUTER/IT

Senior Programmer Analyst (White Plains, New York) - Requires Bachelor's degree (or equiv. foreign educ.) in Computer Science, Computer Engineering, or Electronic Engineering & 2 years' exp. in the job offered or 2 years exp. in use of Powerbuilder, PFC (Powerbuilder Foundation Class Library) Sybase & Perl to develop software for investment mgmt. & brokerage operations. Stated exp must include one year's exp. utilizing each of the following: NOMAD on a VM/CMS operating system, ADP's Brokerage and PSR systems, & object-oriented methodology to develop client/server applications. (Exp may but need not be concurrent.) Utilize Powerbuilder, PFC Sybase & Perl to develop software for investment mgmt. & brokerage ops. 40 hrs./wk. 8:30 a.m. - 5:30 p.m. Apply with resume to Alliance Capital Management L.P., Attn: Karen Mooney, 1345 Avenue of the Americas, 46th Floor, New York, New York 10105

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design, direct software system testing procedures using expertise in Powerbuilder, Java, UML, PowerDesigner, Jaguar, Oracle, Sybase and SQL Server. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer. Knowledge of Powerbuilder, Java, UML, PowerDesigner, Jaguar, Oracle, Sybase and SQL Server. Salary: $74,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Butler County CareerLink, Pullman Commerce Center, 112 Hollywood Dr., Suite 101, Butler, PA 16001. Job No: WEB3149968

SOFTWARE ENGINEER to design, develop, test, implement and maintain web-based application software in a client/server environment using Object Oriented programming, Rapid Application Development, GUI tools, Visual Interdev, Front Page, RDBMS, SQL Server, Oracle, ASP, Visual Basic, VB Script, Java Script, Visual Source Safe, Crystal Reports, IIS, Cold Fusion, Java, Java Beans, J2EE, Java Applets/Servlets, Websphere and Weblogic on Windows NT/98/2000 operating systems. Require B.S. degree in Computer Science or Engineering discipline, or a closely related field with four years of experience in the job offered. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Umesh Bodapati, Softcon USA, Inc., 2604 E. Dempster St., Ste. 209, Park Ridge, IL 60068. Attn: Job: RM

International Programming & Systems, Inc. has employment opportunities for Systems Analysts with any of the following skills: COGEN SAPIENS, TERADATA, VB Developers exp in STRATUS, UNIX, UNIX Systems Admin and Network admin. Positions are available throughout the US inc. Hamilton & W. Trenton NJ, Philadelphia, PA, Seattle, WA. IPS also has openings for Sales and Recruiting staff in our San Francisco office. Electronic responses are encouraged, cjarrell@ipsusa.com or mail resume to IPS, 1875 So. Grant Street, #300, San Mateo, CA 94402. (Fax) 650-872-8679. Principals only please.

SOFTWARE ENGINEER, SPECIALIST

Design, implement and maintain software tools for manipulating 3D CAD data for both PC and UNIX. Design and implement infrastructure for quality/regression testing of such software tools and toolkits. Support the use of such software tools and toolkits. Using C++, tcsh, can scripting, perl, xml and other computer language technologies in the creation of software products. Utilize various source configuration management systems to control code incorporated into software products. Requires a Bachelor's degree in Computer Science, Electrical or Electronic Engineering and 3 years experience in the job offered or 3 years in design/development or research of software algorithms for processing image data. Related occupation experience to include 1 year experience or research in software development of 3D graphics using C++ and Visualization toolkit in Windows environment. 40 hours per week, 8AM to 5PM, Monday through Friday. Salary $56,870 per year. Must have proof of legal authority to work in the United States. Send your resume to the Iowa Workforce Center, 122 Kellogg Avenue, Ames, Iowa 50010-0410. Please refer to Job Order IA1101706. Employer paid advertisement.

Programmer Analyst (Ann Arbor, Michigan) Assist in development of software applications & data distribution tools used to predict trends & pricing in the energy industry. Plan develop & test computer applications for analysis of energy data, applying knowledge of SQL & C Shell on UNIX platforms. Structure energy data utilizing similar techniques to those applied in structuring financial data. Utilize C Shell scripting language to solve technical problems encountered in delivery mechanism. Must have Bach. degree in Bus. Admin, Mngmt, Comp Sci, or related field & 1 year exp in job or in related job of Global Data Analyst. Related exp. must include data structuring for financial markets, C Shell, UNIX, & SQL. Fax resume to 734-332-4440

PROGRAMMER/ANALYST

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Mainframers

skills in conjunction with Poughkeepsie, N.Y.-based Marist College and developing a best-practice knowledge base to which data center managers can contribute their expertise.

"We believe it's a very important issue," said Brian Koma, vice president of marketing at Orange, Calif.-based AFCOM (the Association for Computer Operations Management). He said the organization hopes the initiative will prompt IT managers "to take some early action" to plan for retirements "so they don't have to spend more money later."

In addition to offering hands-on training sessions at AFCOM's semiannual conferences, the initiative provides for undergraduate and certificate courses in data center technology.

Aging Mainframers

A study last year by Meta Group Inc. in Stamford, Conn., found that 55% of IT workers with mainframe experience are over 50 years old. Conference attendees, such as Gerald Tucker, data center operations manager at Foster Farms Inc., one of the largest poultry operations in the U.S., readily agreed with that finding. But he said he isn't sure what to do about it.

Tucker has two mainframe operators with more than 20 years of experience who plan to retire in about six years, and he said finding replacements could be a problem.

"The solution could be an outsourcing possibility at that time," he said.

The Livingston, Calif.-based company needs to find people with a rare set of characteristics: They must have good technical skills and be comfortable dealing with repetitive and mundane tasks, said Tucker. "They are usually one or the other," he said.

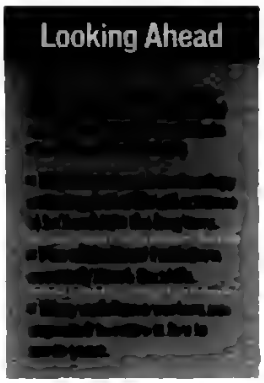
Getting IT professionals, especially young ones, interested in learning mainframe work isn't easy. But Ruben Trujillo, a technical specialist at U.S. Foodservice in Phoenix, said a company program seems to be helping.

New IT employees who may be destined to work in finance, for instance, can volunteer to tour the data center and be exposed to its operations. "It's opened up interest," he said.

One of the data center's selling points is its critical, round-the-clock nature, said Trujillo. "The pressure and importance of it are very high," he said, noting that that can be appealing to some prospective employees. Moreover, the work schedule — 12.5-hour shifts with alternate three- and four-day weeks — is attractive to some, said Trujillo. "I love it. It allows me to spend more time with my family," he said.

Training Costs Rise

IT managers said they're experiencing a rise in training costs. Mainframe skills aren't widely taught, which means companies typically have to pay a premium for travel and training that can be as high as $30,000 to $50,000 annually per employee. "Our training budgets are definitely going up," said Gary Rose, information services operations manager for Bexar County, Texas, in San Antonio.



At the same time, many companies are confronting the mainframe training issue in reverse, as they begin to phase out mainframe systems.

For example, Mattel Toys Inc. is training mainframe operators to work on Sun Microsystems Inc.'s Solaris operating system, among others.

Learning these new systems isn't easy for mainframe workers, said Lynn Hartman, data center manager at Mattel in Phoenix.

"For the older guys, it's a major leap," Hartman said. "But we made it clear it's a necessity, not an option."

Tight IT Budgets Boost Server And Data Center Consolidation

LAS VEGAS

The rush to consolidate servers and the data center is on. Many companies appear to be squeezing redundant hardware, software, maintenance and service costs out of their data centers — and the effort is quickly paying off, according to IT managers.

Bayer Corp. in Pittsburgh offers a dramatic example of how much money can be saved. The company last year consolidated 42 data centers into two and cut the number of servers from 1,335 to 615. Expected savings: $76 million over five years, according to Hobart Moore, an IT manager involved in the project.

The initiative was completed in July and delivered $10 million in savings last year alone, said Moore, who spoke about the consolidation at a data center conference held here last week by the data center professional association AFCOM.

"We showed that we aren't just out there providing services and that we can actually save the company money when it became necessary to do so," said Moore. "We came up with very solid ways of reducing cost without slashing services."

In fact, many IT managers at the conference said they are involved in data center or server consolidation projects.

Over the past two years, Williams-Sonoma Inc. has purchased five of IBM's high-end Regatta Unix servers at a cost of $1.5 million each. The San Francisco company is halfway through a yearlong plan to reduce 100 stand-alone servers to five. Those servers will be moved to a partitioned environment on the Regatta servers, because partitioned servers can run multiple applications on the same box.

> **"You spend a lot of money upfront. [But] it was either that or they were going to buy another 50 servers in the next year."**
>
> STEVE STEWART, DATA CENTER MANAGER, WILLIAMS-SONOMA INC.

"You spend a lot of money upfront," said Steve Stewart, the manager of the retailer's data center. But, he added, "it was either that or they were going to buy another 50 servers in the next year."

Stewart expects a return on investment in two or three years and foresees savings coming from just about every aspect of the data center's operation, including power, maintenance, personnel and licensing fees.

Eliminating one stand-alone server often allows companies to get rid of four more servers: the production server, the testing server, the fail-over server and a development server, said Marvin Hamann, director of operations at Supervalu Inc., an Eden Prairie, Minn.-based wholesaler and distributor of food and general merchandise to grocery and discount stores.

Hamann is reducing the number of stand-alone servers at his company from 120 to 60 by moving to partitioned servers. And that's not the end of the consolidation. "When we get to that goal, we will set a new goal," he said.

Consolidating data centers or servers isn't a new concept, and IT managers at the conference were clearly aware of the potential problems and costs of allowing business units to add server after server to host applications.

But the continuing economic downturn has put pressure on IT departments to cut back. And, as Moore put it, "costs were just getting out of control."

Mark Levin, an analyst at Meta Group Inc. in Stamford, Conn., called consolidation the "hottest thing" and said the most difficult aspect of the effort often is coming to terms with the inventory. Consolidating servers can lead to some management resistance, particularly if a business unit hosts a particular server. But as long as service delivery is unaffected, company buy-in is usually easy to get, IT managers said.

Michael McShane, manager of technical services and operations at Krasdale Food Inc., a White Plains, N.Y.-based food distributor, said getting cooperation from business units for consolidation projects is ultimately not a problem. "The dollars and cents of it convinces higher-ups, and it's a done deal," said McShane.

– Patrick Thibodeau

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Mainframers

skills in conjunctioo with Poughkeepsie, N.Y.-based Marist College and developing a best-practice knowledge base to which data center managers can contribute their expertise.

"We believe it's a very important issue," said Brian Koma, vice president of marketing at Orange, Calif.-based AFCOM (the Association for Computer Operations Management). He said the organization hopes the initiative will prompt IT managers "to take some early actioo" to plan for retirements "so they don't have to spend more money later."

Io additioo to offering hands-on training sessions at AFCOM's semiannual confereoces, the initiative provides for undergraduate and certificate courses in data center technology.

Aging Mainframers

A study last year by Meta Group Inc. in Stamford, Conn., found that 55% of IT workers with mainframe experience are over 50 years old. Conference attendees, such as Gerald Tucker, data center operations manager at Foster Farms Inc., one of the largest poultry operations in the U.S., readily agreed with that finding. But he said he isn't sure what to do about it.

Tucker has two mainframe operators with more than 20 years of experience who plan to retire in about six years, and he said finding replacements could be a problem.

"The solution could be an outsourcing possibility at that time," he said.

The Livingston, Calif.-based company needs to find people with a rare set of characteristics: They must have good technical skills and be comfortable dealing with repetitive and mundane tasks, said Tucker. "They are usually one or the other," he said.

Getting IT professiooals, especially young ones, interested in learning mainframe work iso't easy. But Ruben Trujillo, a technical specialist at U.S. Foodservice in Phoenix, said a company program seems to be helping.

New IT employees who may be destined to work in finance, for instance, can volunteer to tour the data center and be exposed to its operations. "It's opened up interest," he said.

One of the data center's selling points is its critical, round-the-clock nature, said Trujillo. "The pressure and importance of it are very high," he said, ooting that that can be appealing to some prospective employees. Moreover, the work schedule — 12.5-hour shifts with alternate three- and four-day weeks — is attractive to some, said Trujillo. "I love it. It allows me to spend more time with my family," he said.

Training Costs Rise

IT managers said they're experiencing a rise in training costs. Mainframe skills aren't widely taught, which means companies typically have to pay a premium for travel and training that can be as high as $30,000 to $50,000 annually per employee. "Our training budgets are definitely going up," said Gary Rose, information services operatinns manager for Bexar County, Texas, in San Antonio.

At the same time, many companies are confronting the mainframe training issue in reverse, as they begin to phase out mainframe systems.

For example, Mattel Toys Inc. is training mainframe operators to work on Sun Microsystems Inc.'s Solaris operating system, among others.

Learning these new systems isn't easy for mainframe workers, said Lynn Hartman, data center manager at Mattel in Phoenix.

"For the older guys, it's a major leap," Hartman said. "But we made it clear it's a necessity, not an option."

Looking Ahead

There's no shortage of mainframe skills now, but AFCOM says three factors contribute to a potential shortage:

- Mainframes are a fast-growing mainstay, and skills will continue to be needed in the long term.
- Few educational institutions currently teach the skills.
- Many mainframe workers are expected to retire in five to seven years.

Tight IT Budgets Boost Server And Data Center Consolidation

LAS VEGAS

The rush to consolidate servers and the data center is on. Many companies appear to be squeezing redundant hardware, software, maintenance and service costs out of their data centers — and the effort is quickly paying off, according to IT managers.

Bayer Corp. in Pittsburgh offers a dramatic example of how much money can be saved: The company last year consolidated 42 data centers into two and cut the number of servers from 1,335 to 615. Expected savings: $76 million over five years, according to Hobart Moore, an IT manager involved in the project.

The initiative was completed in July and delivered $10 million in savings last year alone, said Moore, who spoke about the consolidation at a data center conference held here last week by the data center professional association AFCOM.

"We showed that we aren't just out there providing services and that we can actually save the company money when it became necessary to do so," said Moore. "We came up with very solid ways of reducing cost without slashing services."

In fact, many IT managers at the conference said they are involved in data center or server consolidation projects.

Over the past two years, Williams-Sonoma Inc. has purchased five of IBM's high-end Regatta Unix servers at a cost of $1.5 million each. The San Francisco company is halfway through a yearlong plan to reduce 100 stand-alone servers to five. Those servers will be moved to a partitioned environment on the Regatta servers, because partitioned servers can run multiple applications on the same box.

> **"You spend a lot of money upfront. [But] it was either that or they were going to buy another 50 servers in the next year."**
>
> **STEVE STEWART,** DATA CENTER MANAGER, WILLIAMS-SONOMA INC.

"You spend a lot of money upfront," said Steve Stewart, the manager of the retailer's data center. But, he added, "it was either that or they were going to buy another 50 servers in the next year."

Stewart expects a return on investment in two or three years and foresees savings coming from just about every aspect of the data center's operation, including power, maintenance, personnel and licensing fees.

Eliminating one stand-alone server often allows companies to get rid of four more servers: the production server, the testing server, the fail-over server and a development server, said Marvin Hamann, director of operations at Supervalu Inc., an Eden Praine, Minn.-based wholesaler and distributor of food and general merchandise to grocery and discount stores.

Hamann is reducing the number of stand-alone servers at his company from 120 to 60 by moving to partitioned servers. And that's not the and of the consolidation. "When we get to that goal, we will set a new goal," he said.

Consolidating data centers or servers isn't a new concept, and IT managers at the conference were clearly aware of the potential problems and costs of allowing business units to add server after server to host applications.

But the continuing economic downturn has put pressure on IT departments to cut back. And, as Moore put it, "costs were just getting out of control."

Mark Levin, an analyst at Meta Group Inc. in Stamford, Conn., called consolidation the "hottest thing" and said the most difficult aspect of the effort often is coming to terms with the inventory. Consolidating servers can lead to some management resistance, particularly if a business unit hosts a particular server. But as long as service delivery is unaffected, company buy-in is usually easy to get, IT managers said.

Michael McShane, manager of technical services and operations at Krasdale Food Inc., a White Plains, N.Y.-based food distributor, said getting cooperation from business units for consolidation projects is ultimately not a problem. "The dollars and cents of it convinces higher-ups, and it's a done deal," said McShane.

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FRANK HAYES ▪ FRANKLY SPEAKING

Missing Mainframers

SUPPOSE THERE'S A SHORTAGE of a particular IT skill set. We all know what happens, don't we? Those skills become hot. Training courses spring up. Salaries go through the roof. And the one thing that surely *won't* happen is that people with expertise in that skill set will be retrained to do something else, thus making the shortage worse — right?

Except when it comes to mainframes. Crazy, huh?

As *Computerworld*'s Patrick Thibodeau reports this week (see story, page 1), mainframers are in such short supply that one professional group for data center managers is setting up its own college-level online courses for potential mainframers. But at the same time, IT shops that are phasing out mainframes are actually retraining experienced mainframers to do nonmainframe IT work.

Insane as that sounds, it *does* make sense when you remember that 55% of mainframers are in their 50s or 60s. These aren't kids who are ready to jump to another company at the drop of a hat. These people are fully vested in their pension plans. They'd rather struggle to learn new technologies than start over at another company that needs their mainframe skills for the few years before they retire.

Meanwhile, young IT people aren't jumping into mainframe work. They were never taught mainframe skills. After all, pundits and analysts and other industry blowhards have been saying mainframes are dead, or at least dying, for a decade now. Why learn something that's dying?

But mainframes aren't dead at many IT shops. And they show no signs of dying soon. Unix didn't kill them. PC networks didn't kill them. Y2k was supposed to kill them when all that mainframe code stopped running on Jan. 1, 2000. But instead we spent billions of dollars fixing that code — and now we have to earn out that investment.

That's not the only reason mainframes refuse to die. Mainframes work. They still set the standards for security and reliability and availability in IT. And mainframe MIPS have kept getting cheaper in the 10 years since IBM realized it could no longer survive by soaking its mainframe customers.

So mainframes aren't going away. But mainframers are. And they're not being replaced.

What do you do if you're looking at a staff of highly experienced mainframers who will be retiring in a few years? You can outsource, but that limits your flexibility — and it hands the management of your most critical data to someoe for whom it's just another job. You can migrate off those mainframes, and if that's your plan, now's the time to start — it'll take years to re-create or transform the business processes embedded in that mainframe code. (That's why it was worth making all those Y2k fixes instead of rewriting the code, remember?)

Or, since you won't be able to hire the mainframe talent you need, you could start creating it yourself.

You could make it part of your shop's primary career path. That means everyone learns the basics. Not everyone will have the right mix of skills and temperament for mainframe work, but a few probably will.

And if those few people with the right aptitude pull the average age of your mainframers down in a few years from, say, 55 to 40, your mainframe skills crisis is over.

Besides, if your mainframes aren't going away, they're a key piece of your IT infrastructure. Like the Internet and security, the mainframe is something everyone in your shop needs to understand. And for that, there's no replacement for hands-on experience.

So you have options: outsourcing, migration or building your own mainframers. But whatever you're going to do about your mainframe skills problem, start working on it now.

Because if your mainframers are gone before you've got something or someone to replace them with, you'll find out just how crazy a skills shortage can be. ◗

Unclear on the Concept

Air Force pilot Ish reports that he can't log into his e-mail. "Send us an e-mail detailing the problem," help desk tech tells him. I can't, says Ish – because I can't log into my e-mail. Can't you take the trouble ticket over the phone? Tech: "No, to confirm your identity, it has to come from your e-mail account. Can you use someone else's e-mail?" Ish: How will that confirm my identity? Tech: "Just put your signature block on the bottom of the e-mail."

SHARK TANK

Efficiency

Database admin pilot Ish takes a part-time job automating enrollment database maintenance for his bank. It takes 80 hours over six months, but it works beautifully when he leaves. A week later, he gets a call. His work never ended. Can he come back and fix it? Ish agrees. "Absolutely, for twenty minutes, my IS was fantastically centralized and my desk space on the mainframe was unassigned," groans Ish. "Management hadn't even taken my steps to save all the work!"

But What a Deal

For his new accounting system project, IT director sells a great deal on hardware PCs. "We got such a shocking good deal [on them] that [he cut an agreement] to [keep the refresh]," says pilot Ish on the return. "Unfortunately, it was [9 months] in advance of the refresh. And when [we came] to deploy the PCs, the software had outgrown the systems," sighs Ish. "Computer life."

Nobody's Perfect

After a major crash, company president gets a new laptop – but he soon complains that the spell checker for his e-mail program is useless. It doesn't take long for support pilot Ish to track down the problem: "Most of the entries the president had added to his custom dictionary were misspelled."

Doing It Right

To make sure a new sales report runs correctly, developer pilot Ish does a final test using the production database. Don't do that, says horrified VP of sales. It could hurt the company if that information got into the hands of competitors. Only use the test database, he tells Ish. But the test database is just a copy of the production data, Ish points out. "Print from the test database all you want," VP insists, "but if you print from the production database again, you're fired."

Just the Fax

"Once I turn off my computer, it won't receive faxes," user tells help desk pilot Ish. "I should still be able to receive faxes when my computer is off. It works fine when my computer is on."

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FRANK HAYES ▪ FRANKLY SPEAKING

Missing Mainframers

SUPPOSE THERE'S A SHORTAGE of a particular IT skill set. We all know what happens, don't we? Those skills become hot. Training courses spring up. Salaries go through the roof. And the one thing that surely *won't* happen is that people with expertise in that skill set will be retrained to do something else, thus making the shortage worse — right?

Except when it comes to mainframes. Crazy, huh?

As *Computerworld*'s Patrick Thibodeau reports this week (see story, page 1), mainframers are in such short supply that one professional group for data center managers is setting up its own college-level online courses for potential mainframers. But at the same time, IT shops that are phasing out mainframes are actually retraining experienced mainframers to do nonmainframe IT work.

Insane as that sounds, it *does* make sense when you remember that 55% of mainframers are in their 50s or 60s. These aren't kids who are ready to jump to another company at the drop of a hat. These people are fully vested in their pension plans. They'd rather struggle to learn new technologies than start over at another company that needs their mainframe skills for the few years before they retire.

Meanwhile, young IT people aren't jumping into mainframe work. They were never taught mainframe skills. After all, pundits and analysts and other industry blowhards have been saying mainframes are dead, or at least dying, for a decade now. Why learn something that's dying?

But mainframes aren't dead at many IT shops. And they show no signs of dying soon. Unix didn't kill them. PC networks didn't kill them. Y2k was supposed to kill them when all that mainframe code stopped running on Jan. 1, 2000. But instead we spent billions of dollars fixing that code — and now we have to earn out that investment.

That's not the only reason mainframes refuse to die. Mainframes work. They still set the standards for security and reliability and availability in IT. And mainframe MIPS have kept getting cheaper in the 10 years since IBM realized it could no longer survive by soaking its mainframe customers.

So mainframes aren't going away. But mainframers are. And they're not being replaced.

What do you do if you're looking at a staff of highly experienced mainframers who will be retiring in a few years? You can outsource, but that limits your flexibility — and it hands the management of your most critical data to someone for whom it's just another job. You can migrate off those mainframes, and if that's your plan, now's the time to start — it'll take years to re-create or transform the business processes embedded in that mainframe code. (That's why it was worth making all those Y2k fixes instead of rewriting the code, remember?)

Or, since you won't be able to hire the mainframe talent you need, you could start creating it yourself.

You could make it part of your shop's primary career path. That means everyone learns the basics. Not everyone will have the right mix of skills and temperament for mainframe work, but a few probably will.

And if those few people with the right aptitude pull the average age of your mainframers down in a few years from, say, 55 to 40, your mainframe skills crisis is over.

Besides, if your mainframes aren't going away, they're a key piece of your IT infrastructure. Like the Internet and security, the mainframe is something everyone in your shop needs to understand. And for that, there's no replacement for hands-on experience.

So you have options: outsourcing, migration or building your own mainframers. But whatever you're going to do about your mainframe skills problem, start working on it now.

Because if your mainframers are gone before you've got something or someone to replace them with, you'll find out just how crazy a skills shortage can be. ▪

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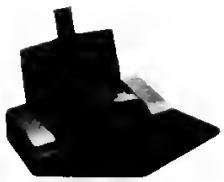

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